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BUREAU OF EDUCATION

BULLETIN, 1920, No. 33

EDUCATIONAL DIRECTC

1920-1921

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

BULLETIN OF THE BUREAU OF EDUCATION FOR 1920.

No. 1. The problem of mathematics in secondary education. A report of the Commission on the Reorganization of Secondary Education, appointed by the National Education Association.

2. Monthly record of educational publications, January, 1920.

3. Private high schools and academies, 1917–18. Advance sheets from the Biennial Survey of Education in the United States, 1916–1918.

4. The problem of adult education in Passaic, N. J. Mrs. A. B. Fernandez.

5. Monthly record of educational publications, February, 1920.

6. Monthly record of educational publications, March, 1920.

7. Requirements for the bachelor's degree. Walton C. John.

8. Agricultural and mechanical colleges. Walton C. John.

9. The feasibility of consolidating the schools of Mount Joy Township, Adams County, Pa. Katherine M. Cook and W. S. Deffenbaugh.

10. Correspondence study in universities and colleges. Arthur J. Klein.

11. Statistics of State school systems, 1917–18. Advance sheets from the Biennial Survey of Education in the United States, 1916–1918. H. R. Bonner.

12. Training teachers for Americanization. John J. Mahoney.

14. Monthly record of educational publications, April, 1920.

15. Monthly record of educational publications, May, 1920.

16. A survey of education in Hawaii.

17. Monthly record of educational publications, June, 1920.

18. Lessons in civics for the six elementary grades of city schools. Hannah M. Harris.

19. Statistics of public high schools, 1917–18. Advance sheets from the Biennial Survey of Education in the United States, 1916–1918. H. R. Bonner.

20. Salaries in universities and colleges in 1920. L. A. Kalbach.

21. Schools in the bituminous coal regions of the Appalachian Mountains. W. S. Deffenbaugh.

22. A school building program for Meriden, Conn.

23. A school building program for Gloucester, Mass.

24. Statistics of city school systems, 1917–18. Advance sheets from the Biennial Survey of Education in the United States, 1916–1918. H. R. Bonner.

25. Monthly record of educational publications, September, 1920.

26. Reorganization of science in secondary schools. A report of the Commission on the Reorganization of Secondary Education, appointed by the National Education Association.

27. Survey of the schools of Brunswick and of Glynn County, Ga.

28. Monthly record of educational publications—Index, February, 1919—January, 1920.

29. The national crisis in education—An appeal to the people.

30. State laws relating to education, enacted in 1918 and 1919. Wm. R. Hood.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 33

EDUCATIONAL DIRECTORY

1920-1921

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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II.—DEPARTMENT OF STATE: EDUCATIONAL ACTIVITIES.

(1) School of Consular Instruction, Washington, D. C.
(2) Student Interpreters' Schools: (*a*) Constantinople, Turkey; (*b*) Tokyo, Japan; (*c*) Peking, China.

III.—DEPARTMENT OF WAR: SYSTEM OF MILITARY EDUCATION.

1. United States Military Academy, West Point, N. Y.

For the education of Cadets (prospective officers) of the Army, with the following primary objects:

(*a*) To so develop the powers of analysis that the mind may reason to a logical conclusion.
(*b*) To instill discipline and a high sense of honor.
(*c*) To bring its graduates to the threshold of their profession properly equipped to pursue its study.

2. Special service schools, for each arm and department.

For preparation for technical and tactical duties in the particular arm or service for duty with troops. Students are the junior officers of the Army. Courses are both basic and advanced.

(1) The Infantry School, Camp Benning, Ga.
(2) The Cavalry School, Fort Riley, Kans.
(3) (*a*) The Field Artillery School, Fort Sill, Okla.
    (*b*) The Field Artillery School, Camp Knox, Ky.
    (*c*) The Field Artillery School, Camp Bragg, N. C.
(4) The Coast Artillery School, Fort Monroe, Va.
(5) The Engineer School, Camp Humphreys, Va.
(6) The Ordnance Schools:
    (1) The Ordnance School of Application at Aberdeen Proving Ground, Aberdeen, Md., for the purpose of instructing officers of the department in mechanical and chemical engineering dealing principally with the theory of ordnance design.
    (2) The Ordnance School of Technology, Watertown Arsenal, Watertown, Mass., for the instruction of officers of the department in metallurgy and metallography, metallurgical chemistry, testing materials, shopwork, machine, smith and foundry, arsenal and general, administration, steam, power and compressed air.
    (3) The Ordnance Operation, Maintenance, and Repair School, Raritan Arsenal, Metuchen, N. J., for the instruction of enlisted men of the Ordnance Department and others who may be detailed to take courses to train them to become machinists, blacksmiths, welders, automobile and tractor mechanics, small arms machine gun armorers, explosive specialists, artillery mechanics, saddlers, woodworkers, depot clerks, and ordnance sergeants.
(7) (*a*) The Signal Corps School, Fort Leavenworth, Kans.
    (*b*) The Signal Corps School, Camp Alfred Vail, N. J.
(8) (*a*) The Air Service Pilot School, Carlstrom Field, Arcadia, Fla.
    (*b*) The Air Service Pilot School, March Field, Riverside, Calif.
    (*c*) The Air Service Pursuit School, Rockwell Field, San Diego, Calif.
    (*d*) The Air Service Bombardment School, Ellington Field, Houston, Tex.
    (*e*) The Air Service Observation School, Post Field, Fort Sill, Okla.
    (*f*) The Air Service Engineering School, Dayton, Ohio.
    (*g*) The Air Service School, Langley Field, Hampton, Va.
    (*h*) The Air Service Mechanics School, Kelly Field, San Antonio, Tex.
    (*i*) The Balloon School, Ross Field, Arcadia, Calif.
    (*j*) The Balloon School, Lee Hall, Va.
    (*k*) The Airship School, Brooks Field, San Antonio, Tex.
(9) The Tank Corps School, Camp Meade, Md.
(10) The Army Band Leaders School, Fort Jay, N. Y.
(11) (*a*) The Chemical Warfare School, Lakehurst, N. J.
    (*b*) The Chemical Warfare School, Edgewood Arsenal, Md.

(12) Motor Transport Schools: (*a*) Camp Holabird, Md.; (*b*) Camp Jessup, Ga.

At the Georgia Institute of Technology and at the Massachusetts Institute of Technology, it is planned to provide advanced training in automotive engineering for Motor Transport Corps officers, the course to be a special one covering one year. It is intended to send five officers to each place. These officers have not yet been selected.

Authority has been obtained from the training section of the General Staff to establish units of the Reserve Officers' Training Corps at each of the following 10 listed colleges: (1) Carnegie Institute of Technology, Pittsburgh, Pa.; (2) University of Pittsburgh, Pittsburgh, Pa.; (3) Ohio State University, Columbus, Ohio; (4) University of Tennessee, Knoxville, Tenn.; (5) University of Georgia, Athens, Ga.; (6) Louisiana State University, Baton Rouge, La.; (7) University of Iowa, Iowa City, Iowa; (8) University of Nebraska, Lincoln, Nebr.; (9) A. & M. College of Utah, Logan, Utah; (10) A. & M. College of Oregon, Corvallis, Oreg.

(13) Medical Department Schools:

(*a*) The Army Medical School, Washington, D. C., for technical training.

(*b*) The Field Service School, Med. Dept., Carlisle, Pa., for training in all field subjects.

(*c*) The Army School of Nursing, Washington, D. C. (Training given in the various military hospitals and through such affiliations as may be required to complete the course, which extends over a period of three years.)

(*d*) Division of physical reconstruction: Educational staff. The Surgeon-General of the Army has designated the following general military hospitals for the work of physical reconstruction of disabled soldiers:

Letterman General Hospital, San Francisco, Calif.; Walter Reed General Hospital, Takoma Park, D. C.; Lawson General Hospital, Fort McPherson, Ga.; O'Reilly General Hospital, Oteen, N. C.; Fitzsimons General Hospital, Denver, Colo.; Lovell General Hospital, Fort Sheridan, Ill.; Hoff General Hospital, Fox Hills, Staten Island, N. Y.; Fort Sam Houston Hospital, Tex.

3. *General schools.*

(1) General Service Schools, Fort Leavenworth, Kans.

(*a*) School of the Line. Preparation of officers for technical handling of troops. Students taken from troops after course at special service schools.

(*b*) General Staff School. Preparation for General Staff duty with tactical units, and for higher tactical commands. Students taken from school of the line.

(2) General Staff College, Washington, D. C.

Preparation for War Department, General Staff, and high command. Students taken from troops after course at General Staff School.

4. *Special schools for enlisted men.*

Various schools for noncommissioned officers, bakers and cooks, teamsters, blacksmiths, farriers, mechanics, chauffeurs, automechanics, clerks, gunners, electricians, carpenters, etc., and various schools for vocational training. Located at all posts and stations of the Army.

5. *Reserve Officers Training Corps Unit.*

NOTE.—The letter (J.) indicates a junior unit. Junior units are given a basic Infantry course.

FIRST CORPS AREA.

(Headquarters: Boston, Mass.)

Institution.	Location.	Kind of unit.
Connecticut:		
Connecticut Agricultural College	Storrs	Inf.
Meriden High School	Meriden	J.
New Britain High School	New Britain	J.
Stamford High School	Stamford	J.
Yale University	New Haven	F. A., S. C., Eng.
Maine:		
Bangor High School	Bangor	J.
University of Maine	Orono	Inf.
Massachusetts:		
Boston University	Boston	Inf.
Gloucester High School	Gloucester	J.
Harvard University	Cambridge	F. A.
Massachusetts Agricultural College	Amherst	Inf., Cav.
Massachusetts Institute of Technology	Cambridge	C. A. S. C., Ord., Eng.
New Bedford High School	New Bedford	J.
New Hampshire:		
New Hampshire College of Agriculture and Mechanic Arts.	Durham	Inf., C. A.
Rhode Island:		
Rhode Island State College	Kingston	Inf.
Vermont:		
Norwich University	Northfield	Cav.
University of Vermont and State Agricultural College.	Burlington	Inf.

SECOND CORPS AREA.

(Headquarters: Governors Island, N. Y.)

Institution.	Location.	Kind of unit.
Delaware:		
Delaware College	Newark	Inf.
New Jersey:		
Bordentown Military Institute	Bordentown	J.
Princeton University	Princeton	F. A.
Rutgers College	New Brunswick	Inf.
New York:		
College of the City of New York	New York City	Inf.
Columbia University	do	Inf., S. C., C. A.
Cornell University	Ithaca	Inf., S. C., F. A., Ord.
Clason Point Military Academy	Bronx, New York City	J.
New York Military Academy	Cornwall-on-Hudson	J.
New York University	New York City	Inf.
Peekskill Military Academy	Peekskill	J.
St. John's School	Manlius	Inf.
Do	do	J.
Syracuse University	Syracuse	Inf.
Porto Rico:		
College of Agriculture and Mechanic Arts	Mayaguez	Inf.
University of Porto Rico	Rio Piedras	Inf.

THIRD CORPS AREA.

(Headquarters: Fort McHenry, Md.)

District of Columbia:		
Georgetown University	Washington	Inf.
Howard University (colored)	do	Inf.
St. John's College	do	J.
Maryland:		
Johns Hopkins University	Baltimore	Inf.
University of Maryland	College Park	Inf.
Mount St. Mary's College	Emmitsburg	Inf.
St. John's College	Annapolis	Inf.
Western Maryland College	Westminster	Inf.
Pennsylvania:		
Carnegie Institute of Technology	Pittsburgh	Eng., S. C., M. T. C.
Drexel Institute	Philadelphia	Inf.
Lafayette College	Easton	Inf.
Lehigh University	South Bethlehem	Inf.
Pennsylvania Military College	Chester	Inf.
University of Pennsylvania	Philadelphia	Inf.
University of Pittsburgh	Pittsburgh	Inf., C. A., M. T. C.
Pennsylvania College	Gettysburg	Inf.
Pottsville High School	Pottsville	J.
Pennsylvania State College	State College	Inf.
Virginia:		
Augusta Military Academy	Fort Definace	J.
Fishburne Military Academy	Waynesboro	J.
Fork Union Military Academy	Fork Union	J.
Hampton Institute (colored)	Hampton	Inf.
Staunton Military Academy	Staunton	J.
Virginia Agricultural and Mechanical College and Polytechnic Institute.	Blacksburg	Inf., Eng., C. A.
Virginia Military Institute	Lexington	Inf., F. A., Cav., Eng.
Blackstone Military Academy	Blackstone	J.

FOURTH CORPS AREA.

(Headquarters: Fort McPherson, Ga.)

Arkansas:		
Little Rock College	Little Rock	Inf.
Ouchita College	Arkadelphia	Inf.
University of Arkansas	Fayetteville	Inf.
Alabama:		
Alabama Polytechnic Institute	Auburn	Inf., F. A., Eng.
Birmingham High Schools	Birmingham	J.
Marion Institute	Marion	Inf.
Do	do	J.
Montgomery Public High School	Montgomery	J.
Springhill College	Mobile	Inf.
Tuskegee Institute (colored)	Tuskegee	J.
University of Alabama	University	Inf., C. A., Eng.
Florida:		
University of Florida	Gainesville	Inf.

FOURTH CORPS AREA—continued.

Institution.	Location.	Kind of unit.
Georgia:		
Atlanta Public High Schools	Atlanta	J.
Emory University	Emory	Inf.
Emory University Academy	Oxford	J.
Georgia Military Academy	College Park	J.
Georgia Military College	Milledgeville	J.
Georgia School of Technology	Atlanta	Inf., C. A., S. C.
University of Georgia	Athens	Inf., Cav., M. T. C.
Gordon Institute	Barnesville	J.
Lanier High School	Macon	J.
North Georgia Agricultural College	Dahlonega	Inf.
Riverside Academy	Gainesville	J.
Louisiana:		
Louisiana State University and Agricultural and Mechanical College.	Baton Rouge	Inf., M. T. C.
St. Charles College	Grand Coteau	J.
Mississippi:		
Gulf Coast Military Academy	Gulfport	J.
Mississippi Agricultural and Mechanical College	Agricultural College	Inf., C. A.
North Carolina:		
Bingham Military School	Asheville	J.
Davidson College	Davidson	Inf.
North Carolina State College of Agriculture and Engineering.	West Raleigh	Inf.
Trinity College	Durham	Inf.
University of North Carolina	Chapel Hill	Inf.
South Carolina:		
Carlisle School	Bamberg	J.
Clemson Agricultural College	Clemson	Inf.
Porter Military Academy	Charleston	J.
Presbyterian College of South Carolina	Clinton	Inf.
University of South Carolina	Columbia	Inf.
The Citadel, The Military College of South Carolina	Charleston	Inf., C. A.
Wofford College	Spartanburg	Inf.
Wofford College Fitting School	do	J.
Tennessee:		
Branham & Hughes Military Academy	Spring Hill	J.
Castle Heights Military Academy	Lebanon	J.
Chattanooga High Schools	Chattanooga	J.
Columbia Military Academy	Columbia	J.
Knoxville High Schools	Knoxville	J.
Massey Military School	Pulaski	J.
Memphis City High Schools	Memphis	J.
Nashville Public High Schools	Nashville	J.
Sewanee Military Academy [1]	Sewanee	J.
Tennessee Military Institute	Sweetwater	J.
University of Tennessee	Knoxville	Inf., Eng., M. T. C.
Union University	Jackson	Inf.

FIFTH CORPS AREA.

(Headquarters: Fort Benjamin Harrison, Ind.)

Institution.	Location.	Kind of unit.
Indiana:		
Culver Military Academy	Culver	Inf., Cav., F. A.
Do	do	J.
Depauw University	Greencastle	Inf.
Gary High Schools	Gary	J.
Howe School	Howe	J.
Indianapolis Public High Schools	Indianapolis	J.
Indiana University	Bloomington	Inf.
Purdue University	Lafayette	Inf., F. A.
Rose Polytechnic Institute	Terre Haute	Eng.
Kentucky:		
Bethel College	Russelville	J.
Louisville Boys' High School	Louisville	J.
Owensboro High School	Owensboro	J.
University of Kentucky	Lexington	Inf.
Western Kentucky State Normal School	Bowling Green	J.
Kentucky Military Institute	Lyndon	Inf.
Do	do	J.
Ohio:		
Denison University	Granville	Inf.
Cleveland Public High Schools	Cleveland	J.
Municipal University of Akron	Akron	Inf.
Ohio Northern University	Ada	Inf.
Ohio State University	Columbus	Inf., F. A.
St. Mary's College	Dayton	Inf.
University of Cincinnati	Cincinnati	Eng., C. A.
West Virginia:		
West Virginia University	Morgantown	Inf., Eng.

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[1] Present address, Palatka, Fla.

SIXTH CORPS AREA.

(Headquarters: Fort Sheridan, Ill.)

Institution.	Location.	Kind of unit.
Illinois:		
Chicago High Schools	Chicago	J.
University of Chicago	do	F. A.
Joliet Township High School	Joliet	J.
Knox College	Galesburg	Inf.
Loyola Academy	Chicago	J.
Morgan Park Military Academy	do	J.
Northwestern College	Naperville	Inf.
Northwestern University	Evanston	Inf.
St. Ignatius College	Chicago	J.
Rockford High Schools	Rockford	J.
St. Viator College	Bourbonnais	J.
University of Illinois	Urbana	Cav., Inf., F. A., S. C., Eng.
Waukegan Township High School	Waukegan	J.
Western Military Academy	Alton	Inf.
Do	do	J.
Michigan:		
Calumet Public High School	Calumet	J.
Detroit High Schools	Detroit	J.
Ferris Institute	Big Rapids	J.
Michigan Agricultural College	Lansing	Inf., C. A., Cav.
University of Michigan	Ann Arbor	S. C., C. A.
Wisconsin:		
Beloit High School	Beloit	J.
Campion College	Prairie du Chien	J.
Northwestern Military and Naval Academy	Lake Geneva	J.
Ripon College	Ripon	Inf.
St. John's Military Academy	Delafield	Inf.
Do	do	J.
University of Wisconsin	Madison	Inf., S. C., F. A., Ord.

SEVENTH CORPS AREA.

(Headquarters: Fort Crook, Nebr.)

Iowa:		
Cedar Rapids High School	Cedar Rapids	J.
Coe College	do	Inf.
Cornell College	Mount Vernon	Inf.
Council Bluffs High School	Council Bluffs	J.
Davenport High School	Davenport	J.
Iowa State College of Agriculture and Mechanic Arts.	Ames	Inf., F. A., Eng.
State University of Iowa	Iowa City	Inf., M. T. C., Eng.
Marshalltown High School	Marshalltown	J.
Kansas:		
Kansas State Agriculture College	Manhattan	Inf., C. A.
Do	do	J.
Leavenworth High School	Leavenworth	J.
St. Mary's College	St. Mary's	J.
University of Kansas	Lawrence	Inf., Eng., C. A.
Fairmount College	Wichita	Inf.
Minnesota:		
College of St. Thomas	St. Paul	Inf.
Do	do	J.
Cretin High School	do	J.
Gustavus Adolphus College	St. Peter	Inf.
Shattuck School	Faribault	J.
University of Minnesota	Minneapolis	Inf., C. A., S. C.
Do	do	J.
Minneapolis Public Schools	do	J.
Missouri:		
Joplin High School	Joplin	J.
Kemper Military School	Booneville	Inf.
Do	do	J.
Missouri School of Mines	Rolla	Eng.
Missouri Military Academy	Mexico	J.
St. Joseph High School	St. Joseph	J.
Wentworth Military Academy	Lexington	J., Inf.
University of Missouri	Columbia	F. A., Inf.
Washington University	St. Louis	Inf., C. A.
Kansas City public schools	Kansas City	J.
Nebraska:		
Creighton University	Omaha	Inf.
Do	do	J.
University of Nebraska	Lincoln	Inf.
Do	do	J.
North Dakota:		
North Dakota Agricultural College	Fargo	Inf.
University of North Dakota	Grand Forks	Inf.

SEVENTH CORPS AREA—continued.

Institution.	Location.	Kind of unit.
South Dakota:		
South Dakota State College of Agriculture and Mechanic Arts.	Brookings	Inf.
Do	do	J.
University of South Dakota	Vermillion	Inf.

EIGHTH CORPS AREA.

(Headquarters: Fort Sam Houston, Tex.)

Arizona:		
University of Arizona	Tucson	Cav.
Colorado:		
Colorado Agricultural College	Fort Collins	F. A.
Do	do	J.
State School of Mines	Golden	Eng.
New Mexico:		
New Mexico College of Agriculture and Mechanic Arts	State College	Inf.
Do	do	J.
New Mexico Military Institute	Roswell	Inf.
Do	do	J.
Oklahoma:		
Oklahoma Agricultural and Mechanical College	Stillwater	Inf.
Do	do	J.
University of Oklahoma	Norman	Inf., F. A.
Oklahoma Military Academy	Claremore	J.
Texas:		
Agricultural and Mechanical College of Texas	College Station	Inf., S. C., F. A., Cav.
Allen Academy	Bryan	J.
Dallas public high schools	Dallas	J.
El Paso High School	El Paso	J.
West Texas Military Academy	San Antonio	J.

NINTH CORPS AREA.

(Headquarters: Presidio of San Francisco, Calif.)

California:		
The Harvard School	Los Angeles	J.
Leland Stanford Jr. University	Palo Alto	Inf., F. A.
Polytechnic High School	Long Beach	J.
Los Angeles high schools	Los Angeles	J.
Loyola College	do	J.
Oakland public high schools	Oakland	J.
Pomona College	Claremont	Inf.
Pasadena High School	Pasadena	J.
Polytechnic High School and Junior College	Riverside	J.
San Diego Junior College	San Diego	J.
San Francisco high schools	San Francisco	J.
University of California	Berkeley	Inf., C. A.
University of California (Southern branch)	Los Angeles	Inf.
Idaho:		
Boise High School	Boise	J.
University of Idaho	Moscow	Inf.
Montana:		
State College of Agriculture and Mechanic Arts	Bozeman	Inf.
Mount St. Charles College	Helena	J.
University of Montana	Missoula	Inf.
Nevada:		
University of Nevada	Reno	Inf.
Reno School District No. 10	do	J.
Oregon:		
Oregon Agricultural College	Corvallis	M. T. C., Inf., F. A., Eng., Cav.
University of Oregon	Eugene	Inf.
Utah:		
Ogden High School	Ogden	J.
Salt Lake City high schools	Salt Lake City	J.
Agricultural College of Utah	Logan	Inf., C. A., M. T. C.
University of Utah	Salt Lake City	F. A.
Washington:		
State College of Washington	Pullman	Inf.
Do	do	J.
University of Washington	Seattle	Inf., C. A.
Walla Walla high schools	Walla Walla	J.
Wyoming:		
Cheyenne high schools	Cheyenne	J.
University of Wyoming	Laramie	Inf.

HAWAIIAN DEPARTMENT.

(Headquarters: Honolulu, Hawaii.)

Institution.	Location.	Kind of unit.
Kamahameha School	Honolulu	J.
Punahou School	do	J.

IV.—DEPARTMENT OF THE NAVY: NAVAL EDUCATIONAL ACTIVITIES.

1. United States Naval Academy, Annapolis, Md.
2. Post-graduate schools in steam, electrical, and gas engineering and aviation.
3. General educational instruction aboard ship; correspondence courses conducted by Morale Division, Bureau of Navigation, Navy Department.
4. Other training activities.

First Naval District, Boston, Mass.

Massachusetts Institute of Technology: Post-graduate course in naval construction.

Newport, R. I., Naval War College.

Naval Training Station:
  Recruit training; special school for enlisted men desiring to enter Naval Academy; trade schools for commissary branch; recruit trade schools; yeoman, Hospital Corps, bugler, musician, preliminary radio and signal schools.
Naval Torpedo Station:
  Torpedo and deep-sea diving classes.

Third Naval District, New York, N. Y.

Columbia University: Post-graduate courses for officers.
  Special courses in Sperry Gyro compass, Ford fire-control instruments, Bliss torpedoes.

New London, Conn.

Submarine Base:
  Officers' submarine, enlisted men's submarine, listeners' school.

Fourth Naval District, Philadelphia, Pa.

Navy Yard: Fuel oil school.

Washington, D. C.

Navy Yard:
  Optical repair, ordnance schools.
Air Station, Anacostia:
  Photographers' school.
  Special courses in compasses and aerology.

Annapolis, Md.

Naval Academy:
  Post-graduate courses in technical subjects for officers.

Fifth Naval District, Norfolk, Va.

Naval Training Station, Naval Operating Base:
  Recruit training; pharmacist's mates, commissary, artificers, electrical, gyro compass, machinists' mates' schools.
  Recruit trade schools: Yeoman, mess attendants, signal, bugler, preliminary radio and signal schools.

Seventh Naval District, Pensacola, Fla.

Naval Air Station:
  Flying school; aerology and meteorology.

Eighth Naval District, Gulfport, Miss.

Naval Training Station:
  Recruit training.

Ninth, Tenth, and Eleventh Naval Districts, Great Lakes, Ill.

Naval Training Station:
  Recruit training; radio school; aviation mechanics' school; yeomen, musicians, hospital corps, preliminary radio and signal schools.
  Twelfth Naval District, San Francisco, Calif.

Naval Training Station:

Recruit training; commissary school; special school for enlisted men desiring to enter Naval Academy; yeomen, musicians, Hospital Corps, signal schools, preliminary radio and signal schools.

Navy Yard, Mare Island, Calif.:

Electrical, gyro compass, artificers, and fuel-oil schools; preliminary radio school.

V.—DEPARTMENT OF THE INTERIOR: EDUCATIONAL ACTIVITIES.

1. INDIAN SCHOOLS.

Name of school.	P. O. address.	Superintendent.
ARIZONA.		
Camp Verde superintendency	Camp Verde	Dr. Joe J. Taylor.
Camp Verde (day)	do	
Clarksdale (day)	Clarksdale	
Colorado River superintendency (bdg.)	Parker	A. F. Duclos.
Fort Apache superintendency	Whiteriver	Chas. L. Davis.
Fort Apache (bdg.)	do	
Canon (day)	do	
Cibecue (day)	Cibecue	
Cibecue (day) (mission)	do	
East Fork (day)	Whiteriver	
East Fork (day) (mission)	do	
Fort Mojave (bdg.) (Reservation bdg.)	Mohave City	Wm. E. Thackrey.
Havasupai (day)	Supai, via Gd. Canyon	Dr. Peter A. Slattery.
Kaibab (day)	Moccasin	Dr. E. A. Farrow.
Leupp superintendency	Leupp	Stephen Janus.
Leupp (bdg.)	do	
Tolchaco (mission)	Tolchaco	
Moqui superintendency	Keams Canon	R. E. L. Daniel.
Chimopovy (day)	Toreva	
Hotevilla-Bacaoi	Hotevilla	
Oraibi (day)	Oraibi	
Polacca (day)	Polacca	
Second Mesa (day)	Toreva	
Navajo superintendency	Ft. Defiance	Peter Paquette.
Navajo (bdg.)	do	
Chin Lee (bdg.)	Chin Lee	
Tohatchi (bdg.)	Tohatchi, N. M	
Cornfields (day)	Cornfields	
Luki Chuki (day)	Via Ft. Defiance	
Gamado (Presbyterian mission)	Gamado	
Rehoboth (Christian Reformed mission)	Gallup, N. M	
St. Michael's (Catholic)	St. Michaels	
Phoenix (nonreservation) (bdg.)	Phoenix	J. B. Brown.
Pima superintendency	Sacaton	W. F. Haygood.
Pima (bdg.)	do	
Blackwater (day)	Blackwater	
Casa Blanca (day)	Vahki	
Chiu Chuischu (day)	Casa Grande	
Cocklebur (day)	do	
Gila Bend (day)	Gila	
Gila Crossing (day)	Komatke	
Maricopa (day)	Laveen	
Pima (day)	Sacaton	
Quajote (day)	Casa Grande	
Santan (day)	Sacaton	
St. Ann's (Guadalupe) (Catholic mission)		
St. John's (Catholic mission)	Phoenix (17 mi. so.)	
Salt River superintendency	Scottsdale	Byron A. Sharp.
Camp McDowell	Camp McDowell	B. A. H. Symons.
Salt River (day)	Scottsdale	
Lehi (day)	Mesa	
San Carlos superintendency	San Carlos	A. H. Symons.
Rice Station (bdg.)	Rice	
San Carlos (day)	San Carlos	
Bylas (day)	Geronimo	
Rice (Evangelical Lutheran mission)		
Sells superintendency	Sells	Thomas F. McCormick.
Sells (day)	do	
Santa Rosa (day)	Santa Rosa	
Tucson (day)	Tucson	
San Xavier Vamori (day)	Sells	
Lourdes (Catholic mission)		
St. Anthony's (day) (Catholic mission)	Escuela	
San Miguel (Catholic) (day)		
Tucson (Presbyterian mission)	Tucson	
Truxton Canon (bdg.)	Valentine	Wm. A. Light.
Western Navajo superintendency	Tuba City	Robt. E. Burris.
Western Navajo (bdg.)	do	
Marsh Pass (bdg.)	Kayenta	
Moencopi (day)	Tuba City	

1. INDIAN SCHOOLS—Continued.

Name of school.	P. O. address.	Superintendent.
CALIFORNIA.		
Bishop superintendency	Bishop	Ray R. Parrett.
Bishop (day)	do	
Big Pine (day)	Big Pine	
Independence (day)	Independence	
Pine Creek (day)	Bishop	
Fort Bidwell (Reservation bdg.)	Fort Bidwell	O. C. Gray.
Fort Yuma superintendency	Yuma	Loson L. Odle.
Fort Yuma (bdg.)	do	
Cocopah (day)	Somerton	
Greenville (reservation; bdg.)	Greenville	Edgar K. Miller.
Hoopa Valley (bdg.)	Hoopa	Jesse B. Mortsolf.
Mission agency	Riverside	Paul T. Hoffman.
Campo (day)	San Jacinto	
La Jolla (day)	Valley Center	
Mesa Grande (day)	Mesa Grande	
Pala (day)	Pala	
Volcan (day)	Santa Ysabel	
St. Boniface (Catholic mission)	San Jacinto	
Round Valley superintendency	Covelo	Walter W. McConihe.
Pinoliville (day)	Ukiah	
Upper Lake (day)	Upper Lake	
Yokaia	Ukiah	
Sherman Institute (nonreservation; bdg.)	Riverside	F. M. Conser.
Tule River superintendency	Porterville	Frank A. Virtue.
Tule River (day)	do	
Auberry (day)	Auberry	
Burrough (day)	*Toll House	
COLORADO.		
Southern Ute superintendency	Ignacio	Edward E. McKean.
Allen (day)	Bayfield	
Ute Mountain (bdg.)	Towaoc	Emmett E. McNeilly.
IDAHO.		
Coeur d'Alene superintendency	Sorrento	H. D. Lawsho.
Kalispel (day)	Cusick, Wash	
Kootenai (day)	Bonners Ferry	
De Smet (Catholic mission)	De Smet	
Fort Hall superintendency	Fort Hall	L. W. Aschemeier.
Fort Hall (bdg.)	do	
Good Shepherd (Episcopal mission)		
Presbyterian mission		
Fort Lapwai superintendency	Lapwai	Oscar H. Lipps.
St. Joseph's (mission school)	Slickpoo	
IOWA.		
Sac and Fox superintendency	Toledo	Dr. Jacob Breid.
Fox (day)	Tama	
Mesquakie (day)	do	
KANSAS.		
Haskell Inst. (nonreservation; bdg.)	Lawrence	Hervey B. Peairs.
Kickapoo superintendency:		
No. 1 (day)		
No. 2 (day)	Horton	A. R. Snyder.
MICHIGAN.		
Macinac superintendency	Baraga	Edw. Clements.
Baraga (Holy Name) (Catholic mission)	do	
Harbor Springs (Holy Childhood) (Catholic mission)	Harbor Springs	
Mount Pleasant (nonreservation; bdg.)	Mount Pleasant	R. A. Cochran.
MINNESOTA.		
Leech Lake (bdg.)	Onigum	H. K. Meyers.
Cass Lake (day)	Cass Lake	
Pipestone superintendency	Pipestone	Cora Padgett.
Pipestone (nonreservation; bdg.)	do	
Red Lake superintendency	Red Lake	Geo. W. Cross.
Red Lake (bdg.)	do	
Cross Lake (bdg.)	Ponemah	
Grand Portage (day)		
Nett Lake (day)		
St. Mary's (Catholic mission)	Red Lake	

1. INDIAN SCHOOLS—Continued.

Name of school.	P. O. address.	Superintendent.
MINNESOTA—continued.		
White Earth superintendency	White Earth	Peter R. Wadsworth, supervisor in charge.
Pine Point (day)	Ponsford	
St. Benedict's (Catholic mission)	White Earth	
MONTANA.		
Blackfeet superintendency	Browning	H. G. Wilson, supervisor in charge.
Blackfeet (bdg.)	do.	
Heart Butte (day)	do.	
Old Agency or Badger Creek (day)	Family	
Holy Family (Catholic mission)	Browning	
Crow superintendency	Crow Agency	Calvin H. Asbury.
Crow (bdg.)	do.	
Black Lodge (Am. Missionary Soc.)		
Lodge Grass (Baptist bdg.)	Lodgegrass	
Reno (Am. Missionary Soc.)	do.	
St. Ann's (Catholic mission)	do.	
St. Xavier (Catholic mission)	St. Xavier	
Wyola (Baptist)	Wyola	
Flathead superintendency	Dixon	F. C. Campbell.
St. Ignatius (Catholic mission)	St. Ignatius	
Fort Belknap superintendency	Harlem	John T. Marshall.
Fort Belknap (bdg.)	do.	
Lodge Pole (day)	Lodge Pole	
St. Paul's (Catholic mission)	St. Paul's	
Fort Peck superintendency	Poplar	Eugene D. Mossman.
Fort Peck (bdg.)	do.	
School No. 1	Culbertson	
School No. 2	Brockton	
Wolf Point (Presbyterian mission)	Wolf Point	
Tongue River superintendency	Lamedeer	O. M. Boggess.
Tongue River (bdg.)	do.	
Lamedeer (day)	do.	
Birney (day)	Birney	
St. Labre's (Catholic mission)	Ashland	
NEBRASKA.		
Genoa (nonreservation; bdg.)	Genoa	Sam B. Davis.
Santee superintendency:		
Santee Normal Training School (Cong.)	(Under Yankton superintendency.)	
Winnebago superintendency	Winnebago	Frank T. Mann.
St. Augustine (Catholic mission)		
Winnebago Mission (bdg.)	Winnebago	
All Saints' Mission (day)	do.	
NEVADA.		
Carson (nonreservation; bdg.)	Stewart	F. Snyder.
Fallon superintendency	Fallon	Harry M. Carter.
Fallon (day)	do.	
Lovelocks (day)	Lovelocks	
Fort McDermitt (day)	McDermitt	F. A. Thompson.
Moapa River (day)	Las Vegas	Dr. L. B. Sandall.
Nevada superintendency	Nixon	Jos. D. Oliver.
Nevada (day)		
Wadsworth (day)		
Walker River (day)	Schurz	J. E. Jenkins.
Western Shoshone superintendency:		
Schools Nos. 1, 2, and 3 (day)	Owyhee	Francis A. Swayne.
NEW MEXICO.		
Albuquerque (nonreservation; bdg.)	Albuquerque	Reuben Perry.
Mescalero (bdg.)	Mescalero	E. Stecker.
Pueblo Bonito superintendency	Crownpoint	Saml. F. Stacher.
Pueblo Bonito (bdg.)	do.	
Pinedale (day)	do.	
Southern Pueblo superintendency (day)	Albuquerque	Leo Crane.
Acomita (day)	Acomita	
Cochiti (day)	Pena Blanca	
Encinal (day)	Cubero	
Jemez (day)	Jemez	
Isleta (day)	Isleta	
Laguna (day)	Laguna	

1. INDIAN SCHOOLS—Continued.

Name of school.	P. O. address.	Superintendent.
NEW MEXICO—continued.		
Southern Pueblo superintendency (day)—Continued.		
McCarty's	Acomita	
Mesita (day)	Laguna	
Paguate (day)	do	
Paraje (day)	Casa Blanca	
San Felipe (day)	Algodones	
Santo Domingo (day)	Domingo	
Seama (day)	Cubero	
Sia (day)	Sandoval	
Northern Pueblo superintendency (day)	Espanola	H. J. Johnson.
Bernalillo (Catholic mission) (day)	Bernalillo	
Picuris (day)	Penasco	
San Ildefonso (day)	Santa Fe	
San Juan (day)	Chamite	
Santa Clara (day)	Espanola	
Taos (day)	Taos	
St. Catharine's Mission (Catholic) (day)		
San Juan superintendency:		
San Juan (bdg.)	Shiprock	Evan W. Estep.
Toadlena (bdg.)	Toadlena	
Santa Fe (nonreservation, bdg.)	Santa Fe	John D. De Huff.
Zuni superintendency	Blackrock	Robt. J. Bauman.
Zuni (bdg.)	do	
Zuni (day)	do	
Christian Reformed Mission	do	
NORTH CAROLINA.		
Cherokee superintendency	Cherokee	Jas. E. Henderson.
Cherokee (bdg.)	do	
Big Cove (day)	Ravensford	
Birdtown (day)	Cherokee	
Little Snowbird (day)	Robbinsville	
Snowbird Gap (day)	do	
NORTH DAKOTA.		
Bismarck (nonreservation, bdg.)	Bismarck	Adam T. Neff.
Fort Berthold superintendency	Elbowoods	E. W. Jermark.
School No. 2 (day)	do	
School No. 3 (day)	do	
Fort Berthold (Catholic mission)	do	
Congregational (Congregational mission)	do	
Fort Totten (bdg.)	Fort Totten	S. A. M. Young.
Standing Rock superintendency:		
Standing Rock (bdg.)	Fort Yates	Jas. B. Kitch.
St. Elizabeth's (Episcopal mission)	Wakpala, S. Dak	
Turtle Mountain superintendency	Belcourt	H. J. McQuigg.
School No. 5 (day)	Dunseith	
Wahpeton (nonreservation, bdg.)	Wahpeton	Jesse W. Smith.
OKLAHOMA.		
Cantonment (bdg.)	Cantonment	C. T. Coggeshall.
Cheyenne and Arapaho superintendency, Cheyenne and Arapaho (bdg.).	Concho	Leo S. Bonnin.
Chilocco (nonreservation, bdg.)	Chilocco	C. M. Blair, ass't superintendent in charge.
Kiowa superintendency	Anadarko	C. V. Stinchecum.
Anadarko (bdg.)	do	
Fort Sill (bdg.)	Lawton	
Riverside (bdg.)	Anadarko	
Osage superintendency	Pawhuska	J. Geo. Wright.
Osage (bdg.)	do	
St. Louis's (Catholic mission)	do	
Quapaw superintendency	Baxter Springs, Kans.	Carl F. Mayer.
St. Mary's (Catholic mission)	R. F. D. No. 2	
Pawnee (bdg.)	Pawnee	Jos. C. Hart.
Seger (bdg.) (Seger, supt.) (day)	Colony	Fred E. Perkins.
Red Moon	Hammon	
Seneca superintendency	Wyandotte	Arthur G. Wilson.
Seneca (bdg.)	do	
Shawnee superintendency	Shawnee	Ira C. Deaver.
Sacred Heart (St. Benedict's) (Catholic mission)	Sacred Heart	
Sacred Heart (St. Mary's) (Catholic mission)	do	
Five Civilized Tribes:		
Cherokee Nation, Cherokee Orphan Training School (bdg.).	Tahlequah	J. P. Ryder.

1. INDIAN SCHOOLS—Continued.

Name of school.	P. O. address.	Superintendent.
OKLAHOMA—continued.		
Five Civilized Tribes—Continued.		
Creek Nation—		
Euchee (bdg.)	Sapulpa	W. D. Dilbeck.
Eufaula (bdg.)	Eufaula	Mary Morley.
Nuyaka (bdg.)	Nuyaka	Jack Brown.
Chickasaw Nation, Bloomfield Seminary (bdg.)	Ardmore	M. R. Forman (Miss).
Choctaw Nation—		
Jones Male Academy (bdg.)	Hartshorne	H. P. Warren.
Wheelock Academy (bdg.)	Millerton	Mrs. Elsie E. Newton, supervisor in charge.
Old Goodland (nondenominational)	Hugo	
St. Agnes Mission (Catholic)	Antlers	
Chickasaw and Choctaw Nation—		
Murray School of Agriculture (private)	Tishomingo (State School).	
Oklahoma Presbyterian College (mission)	Durant	
St. Agnes Academy (Catholic mission)	Ardmore	
St. Elizabeth's (Catholic mission)	Purcell	
St. Joseph's (Catholic mission)	Chickasha	
Seminole Nation, Mekusukey (bdg.)	Seminole	E. Swengel.
OREGON.		
Klamath superintendency	Klamath Agency	W. G. West.
Klamath (bdg.)	do	
School No. 3 (day)	Beatty, via Agency	
Salem (nonreservation, bdg.)	Chemawa	Harwood Hall.
Umatilla superintendency	Pendleton	E. L. Swartzlander.
Umatilla (day)	do	
Tutuilla (day)	do	
St. Andrew's (Kate Drexel) (Catholic mission)	do	
Warm Springs superintendency	Warm Spring	O. L. Babcock.
Warm Springs (bdg.)	do	
Simnasho (day)	Simnasho	
SOUTH DAKOTA.		
Cheyenne River superintendency	Cheyenne Agency	J. H. McGregor.
Cheyenne River (bdg.)	do	
Crow Creek superintendency	Crow Creek	H. P. Marble.
Crow Creek (bdg.)	do	
Immaculate Conception (Catholic)	Stephan	
Flandreau (nonreservation, bdg.)	Flandreau	C. F. Peirce.
Pierre (nonreservation, bdg.)	Pierre	C. J. Crandall.
Pine Ridge superintendency [1]	Pine Ridge	H. M. Tidwell.
Pine Ridge (bdg.)	do	
Holy Rosary (Catholic mission)		
Schools Nos. 1, 4, 5, 6, 7, 9 to 30, inclusive (day)		
Rapid City (nonreservation, bdg.)	Rapid City	J. F. House.
Rosebud superintendency [2]	Rosebud	John A. Buntin.
Rosebud (bdg.)	Mission	
St. Mary's (mission bdg.; Episcopal)		
St. Francis (mission bdg.; Catholic)		
Sisseton (day)	Sisseton	J. L. Suffecool.
UTAH.		
Goshute	Ibapah	Nick Conner.
Shivwits (day)	Santa Clara	Arthur C. Plake.
Uintah (bdg.)	Fort Duchesne	A. H. Kneale.
WASHINGTON.		
Colville superintendency	Nespelem	O. C. Upchurch.
School No. 1 (day)	Covada	
School No. 3 (day)	Nespelem	
School No. 4 (day)	Daisy	
School No. 9	Keller	
Sacred Heart (Catholic mission)		
St. Mary's (Catholic mission)		
St. George's (Catholic mission)	Tacoma	
Neah Bay superintendency	Neah Bay	A. D. Dodge.
Neah Bay (day)	do	
Quileute (day)	Mora	
Spokane superintendency	Wellpinit	O. C. Upchurch.
School No. 1 (day)	Miles	
School No. 2 (day)	Wellpinit	

[1] See Supp. No. 1.

[2] Supp. No. 2.

1. INDIAN SCHOOLS—Continued.

Name of school.	P. O. address.	Superintendent.
WASHINGTON—continued.		
Taholah superintendency	Taholah	Dr. E. W. Hill.
St. George's (Catholic mission) (day)	Chehalis	
Taholah (day)	Taholah	
Chehalis (day)	Tacoma	
Tulalip superintendency	Tulalip	W. F. Dickens, special supervisor in charge.
Jamestown (day)	do	
Port Gamble (day)	do	
Tulalip (bdg.)	do	
Lummi (day)	Marietta	
Swinomish (day)	La Conner	
WISCONSIN.		
Hayward superintendency	Hayward	R. C. Craige.
Hayward (reservation bdg.)	do	
Keshena superintendency	Keshena	E. A. Allen.
Keshena (bdg.)	do	
Neopit (day)	Neopit	
Hobart Mission (Episcopal)	do	
St. Joseph's (Catholic mission)	Keshena	
St. Anthony's (Catholic mission)	Neopit	
Lac du Flambeau (bdg.)	Lac du Flambeau	J. W. Balmer.
La Pointe superintendency	Ashland	P. S. Everest.
Odanah Mission (Catholic)	Odanah	
St. Mary's (Catholic mission)	do	
Red Cliff superintendency	Bayfield, Wis	M. A. Sutton.
Red Cliff (day)	do	
Bayfield (Holy Family) (Catholic mission)	do	
Tomah (nonreservation; bdg.)	Tomah	L. M. Compton.
WYOMING.		
Shoshone superintendency	Fort Washakie	E. A. Hutchinson.
Shoshone (bdg.)	do	
St. Stephen's (Catholic mission)	St. Stephen's	
Shoshone (Episcopal mission)	Wind River	
St. Michael's (mission bdg.; Protestant Episcopal)		

NOTE.—In the foregoing list "day" indicates a day school and "bdg." a boarding school.

SUPPLEMENT No. 1.—PINE RIDGE DAY SCHOOLS.

No. 1	Agency.
No. 4	10 miles north of agency on White Clay Creek.
No. 5	20 miles northwest of agency mouth of White Clay Creek.
No. 6	25 miles northwest of agency on White River.
No. 7	15 miles northeast of agency on Wounded Knee Creek.
No. 9	18 miles north-northeast of agency on Wounded Knee Creek.
No. 10	22 miles north-northeast of agency on Wounded Knee Creek.
No. 12	32 miles north of agency on Wounded Knee Creek.
No. 13	35 miles north-northeast of agency on Porcupine Creek.
No. 14	52 miles east of agency on Lake Creek.
No. 15	30 miles north-northeast of agency on Porcupine Creek.
No. 16	25 miles northeast of agency on Porcupine Creek.
No. 17	40 miles northeast of agency on American Horse Creek.
No. 18	45 miles north-northeast of agency on Medicine Root Creek.
No. 19	40 miles northeast of agency on Little Wound Creek.
No. 20	45 miles northeast of agency on No Flesh Creek.
No. 21	50 miles east-northeast of agency on Corn Creek.
No. 22	65 miles northeast of agency on Bear Creek.
No. 23	60 miles north-northeast of agency on Potato Creek.
No. 24	80 miles northeast of agency on Lone Tree Creek.
No. 25	15 miles northwest of agency on White Clay Creek.
No. 26	30 miles north of agency on White River.
No. 27	6 miles north of agency on White Clay Creek.
No. 28	5 miles east of agency on Wolf Creek.
No. 29	50 miles northeast of agency on Medicine Root Creek.
No. 30	On Porcupine Creek.

SUPPLEMENT No. 2.—ROSEBUD DAY SCHOOLS.

Blackpipe	30 miles northwest of agency on Blackpipe Creek.
Corn Creek	37 miles northwest of agency at junction of Blackpipe and Corn Creek.
Cut Meat	13 miles northeast of agency on Cut Meat Creek.
He Dog's Camp	18 miles northwest of agency on branch of Cut Meat Creek.
Ironwood	8 miles west of agency.
Little Crow's	40 miles northeast of agency; 60 miles north Valentine, Nebr.; 75 miles southwest Chamberlain, S. Dak.
Milk's Camp	100 miles east of agency on Ponca Creek.
Oak Creek	30 miles northeast of agency; 45 miles north of Valentine, Nebr.
Pine Creek	28 miles northeast of agency on Little White River.
Rosebud Day	At agency.
Spring Creek	17 miles southwest of agency.
Upper Cut Meat	18 miles northwest of agency on Cut Meat Creek.
Whirlwind soldier	55 miles northeast of agency on Oak Creek, 4 miles south of White River.
Wood	35 miles northeast of agency.

(2) Columbia Institution for the Deaf, Washington, D. C., Percival Hall, president.

(3) Howard University, Washington, D. C., Stephen M. Newman, A. M., D. D., president.

(4) Territory of Alaska.[1]

VI.—Department of Agriculture: Educational Activities.

The department, through the States Relations Service (A. C. True, director), affiliates with the State agricultural colleges and experiment stations, under the acts of Congress granting funds to these institutions for agricultural experiment stations and cooperative extension work in agriculture and home economics, and in carrying out the provisions of acts of Congress making appropriations to this department for farmers, cooperative demonstration work, investigations relating to agricultural schools, farmers' institutes, and home economics and the maintenance of agricultural experiment stations in Alaska, Hawaii, Porto Rico, and Guam.

VII.—Department of Labor: Educational Activities.

The Division of Citizenship Training of the Bureau of Naturalization has charge of the work of promoting instruction and training in citizenship responsibilities of applicants for naturalization by the public schools. This promotion work is now being carried on in over 3,200 cities and towns throughout the United States.

It furnishes textbooks, free of charge, to these students, and presents certificates of proficiency and of graduation jointly with the public school authorities to the adult foreigners in these classes who have taken steps to become citizens of the United States.

The public schools are conducting these classes jointly with the Division of Citizenship Training in industrial plants, mines, and logging camps, as well as in the regularly recognized public school buildings throughout the United States. It furnishes naturalization forms to employers of foreign labor, to groups of employees, and to other organizations to aid foreigners in their desire to become American citizens, and in stimulating a desire on their part to attend these classes for citizenship training in the public schools throughout the United States.

VIII.—Independent Establishments: Educational Activities.

1. Library of Congress, Herbert Putnam, librarian. (While not a lending library, but primarily and essentially a reference library, the Library of Congress maintains an inter-library loan system, by which special service is rendered to scholarship by the lending of books to other libraries for the use of investigators engaged in serious research.)

2. Smithsonian Institution, Charles D. Walcott, secretary:

(a) United States National Museum (including the National Gallery of Art), W. de C. Ravenel, administrative assistant to the secretary in charge; (b) Bureau of American Ethnology, J. Walter Fewkes, chief; (c) International Exchanges, C. G. Abbot, assistant secretary in charge; (d) National Zoological Park, Ned Hollister, superintendent; (e) Astrophysical observatory, C. G. Abbot, director; (f) Regional Bureau for the United States, International Catalog of Scientific Literature, Leonard C. Gunnell, assistant in charge.

3. National Academy of Sciences, Charles D. Walcott, president; C. G. Abbot, home secretary; George E. Hale, foreign secretary.

(a) National Research Council, James R. Angell, chairman; Vernon Kellogg, secretary.

4. The Panama Canal (Canal Zone), A. R. Lang, superintendent of schools.

5. Civil Service Commission, Martin A. Morrison, Geo. R. Wales, Mrs. Helen H. Gardener, Commissioners; John T. Doyle, secretary.

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[1] See Principal State school officers; County and other local superintendents of schools; Superintendents of public schools in cities and towns.

6. FEDERAL BOARD FOR VOCATIONAL EDUCATION.[2]

MEMBERS.

William B. Wilson, Secretary of Labor, chairman.
Joshua W. Alexander, Secretary of Commerce.
Edwin T. Meredith, Secretary of Agriculture.
P. P. Claxton, Commissioner of Education.
James P. Munroe, Manufacture and Commerce, vice chairman.
Calvin F. McIntosh, Agriculture.
Arthur E. Holder, Labor.

EXECUTIVE STAFF.

(Office: Maltby Building, 200 New Jersey Avenue NW., Washington, D. C.)

Uel W. Lamkin, director.
E. Joseph Aronoff, secretary.
C. E. Alden, chief clerk.
H. F. Dolan, disbursing officer.
S. N. Quillin, auditor.

VOCATIONAL EDUCATION DIVISION.

Layton S. Hawkins, assistant director for vocational education.
J. C. Wright, chief, industrial education service.
C. W. Lane, chief, agricultural education service.
Anna E. Richardson, chief, home economics education service.
F. G. Nichols, chief, commercial education service.

VOCATIONAL REHABILITATION DIVISION (SOLDIERS).

R. T. Fisher, assistant director for vocational rehabilitation.
C. E. Partch, William A. Clark, E. B. Luce, and E. R. Witman, administrative assistants.
W. I. Hamilton, chief of training relations.
H. L. Brunson, chief of industrial relations.
Col. J. R. McDill, chief of medical relations.

INDUSTRIAL REHABILITATION DIVISION.

Lewis H. Carris, assistant director for industrial rehabilitation.

DISTRICT VOCATIONAL OFFICES.

District.	Address.	State.
District No. 1	F. T. A. McLeod, Boston, Mass., 101 Milk Street	Maine, Vermont, New Hampshire, Massachusetts, Rhode Island.
District No. 2	W. F. Shaw, New York City, 23 West Forty-third Street.	Connecticut, New York, New Jersey.
District No. 3	R. J. Fuller, Philadelphia, Pa., 140 North Broad Street.	Pennsylvania, Delaware.
District No. 4	W. H. Magee, Baltimore, Md., 450 Lexington Building.	District of Columbia, Maryland, Virginia, West Virginia.
District No. 5	C. G. Schulz, Atlanta, Ga., 312 Majestic Building	North Carolina, South Carolina, Tennessee, Georgia, and Florida.
District No. 6	L. R. Fuller, New Orleans, La., 412 Maison Blanche Annex.	Alabama, Mississippi, Louisiana.
District No. 7	Louis Herbst, Cincinnati, Ohio, 505–12 Lyric Theater Building, Vine Street.	Ohio, Indiana, Kentucky.
District No. 8	Chas. W. Sylvester, Chicago, Ill., 14 East Congress Street.	Michigan, Illinois, Wisconsin.
District No. 9	C. E. Partch, St. Louis, Mo., 6801 Delmar Avenue	Iowa, Nebraska, Kansas, Missouri.
District No. 10	C. A. Zuppann, Minneapolis, Minn., 600 Keith-Plaza Building, 1700 Hennepin Avenue.	Minnesota, North Dakota, South Dakota, Montana.
District No. 11	H. Allen Nye, Denver, Colo., U. S. National Bank Building.	Wyoming, Colorado, New Mexico, Utah.
District No. 12	Nicholas Ricciardi, San Francisco, Calif., 521 Flood Building.	California, Nevada, Arizona.
District No. 13	C. H. Anderson, Seattle, Wash., fifth floor, Arcade Building.	Idaho, Oregon, Washington.
District No. 14	W. F. Doughty, Dallas, Tex., Baker Building, Akard and Pacific Avenue.	Arkansas, Oklahoma, Texas.

Specialists for blind: Harold Molter, supervisor; O. H. Burritt, consultant, Federal Board for Vocational Education, Washington, D. C.

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[2] The Federal Board for Vocational Education has been charged with the responsibility of reeducating disabled soldiers and sailors. It is the intention of the board to use the resources of existing institutions and, so far as practicable, to train men in institutions as near as possible to their homes. The board is limited in its work of vocational education to beneficiaries of the war-risk insurance act. Men are received for training after they are discharged from the hospitals and from the Army.

LOCAL VOCATIONAL OFFICES.

District.	City.	Address.
District No. 1	Portland, Me	324 Masonic Building, 415 Congress Street.
	Providence, R. I	214 Jackson Building, 511 Westminster Street.
	Springfield, Mass	406 Massasoit Building, 244 Main Street.
District No. 2	Albany, N. Y	327 Educational Building.
	Buffalo, N. Y	Mutual Life Building.
	Poughkeepsie, N. Y	Taylor Building, 35 Market Street.
	Rochester, N. Y	75 State Street.
	Syracuse, N. Y	327 Montgomery Street.
	Troy, N. Y	32 Post Office Building.
	Utica, N. Y	47 Mann Building.
	Camden, N. J	312 Temple Building.
	Jersey City, N. J	571 Jersey Avenue.
	Newark, N. J	9 Franklin Street.
	Hartford, Conn	Municipal Building.
	New Haven, Conn	740 Chapel Street.
	Bridgeport, Conn	309 Liberty Building.
District No. 3	Allentown, Pa	Room 24 B. and B. Building, Sixth and Hamilton Streets.
	Erie, Pa	Marine National Bank Building, Ninth and State Streets.
	Harrisburg, Pa	Spooner Building, No. 9 North Second Street.
	Johnstown, Pa	Chamber of Commerce, Fort Stanwix Hotel, Main Street.
	Pittsburgh, Pa	491 Union Arcade Building, Fifth Avenue and Penn Way.
	Scranton, Pa	Room 520, Connel Building, 419 Washington Avenue.
	Williamsport, Pa	No. 29 Federal Building, Fourth Street.
District No. 4	Norfolk, Va	400 Flat Iron Building.
	Richmond, Va	60 Times Despatch Building.
	Roanoke, Va	First National Bank Building.
	Washington, D. C	1410 Pennsylvania Avenue NW.
	Charleston, W. Va	108½ Capitol Street.
	Clarksburg, W. Va	303 Union Bank Building.
District No. 5	Chattanooga, Tenn	Y. M. C. A. Building.
	Nashville, Tenn	405 Post Office Building.
	Columbia, S. C	500 Loan and Exchange Bank Building.
	Charlotte, N. C	United States Assay Office.
	Jacksonvile, Fla	Bell Telephone Building.
	Palatka, Fla	Federal Building.
	Savannah, Ga	City Auditorium Building.
District No. 6	Birmingham, Ala	708 Chamber of Commerce Building.
	Mobile, Ala	208 Masonic Temple.
	Lafayette, La	Post Office Building.
	New Orleans, La	Washington Artillery Hall.
	Shreveport, La	Cahn Building.
	Jackson, Miss	McRae Building.
District No. 7	Cleveland, Ohio	Room 610, Standard Parts Building, Twelfth and Walnut Streets.
	Columbus, Ohio	Room 211, Columbus Guarantee Mortgage Co. Building, 38 West Gay Street.
	Toledo, Ohio	705 Nasby Building, southwest corner Madison and Huron Avenues.
	Indianapolis, Ind	Meridian Life Building.
	Hopkinsville, Ky	Phoenix Building.
	Winchester, Ky	Clark Co. National Bank Building.
	Louisville, Ky	612 Starks Building, Fourth and Walnut Streets.
District No. 8	Detroit, Mich	207 Henry Street.
	Grand Rapids, Mich	217 Fourth National Bank Building.
	Jackson, Mich	Rogers Building.
	Marquette, Mich	Werner Building.
	Saginaw, Mich	310 Eddy Building.
	Eau Claire, Wis	37 City Hall.
	Green Bay, Wis	South room, second floor, Federal Building.
	Milwaukee, Wis	1312 First National Bank Building.
	Batavia, Ill	104 South Batavia Street.
	Rockford, Ill	200 Warren Building, 214 South Main Street.
	Peoria, Ill	401 Federal Building.
	Centralia, Ill	Suite 5, Pfeiffer Building, 306 East Broadway.
	Champaign, Ill	First National Bank Building.
District No. 9	Des Moines, Iowa	208 Polk County Courthouse.
	Kansas City, Mo	McMillen Building.
	Lincoln, Nebr	Fourth floor, City Hall.
	Wichita, Kans	218 Union National Bank Building.
District No. 10	Duluth, Minn	614 Manhattan Building.
	St. Paul, Minn	411 Post Office Building.
	Fargo, N. Dak	55 Edwards Building.
	Sioux Falls, S. Dak	203 Western Surety Building.
	Helena, Mont	3 Montana Building.

LOCAL VOCATIONAL OFFICES—continued.

District.	City.	Address.
District No. 11	Albuquerque, N. Mex	Commerce Building, Fourth and Gold Streets.
	Pueblo, Colo	Room 4, County Courthouse.
	Salt Lake City, Utah	212 Boston Building.
	Casper, Wyo	Chamber of Commerce Building, 328 East Second Street.
	Cheyenne, Wyo	527 Hynds Building.
	Sheridan, Wyo	Post Office Building.
District No. 12	Los Angeles, Calif	613 Merchants Trust Building, 207 South Broadway.
	Fresno, Calif	
	Phoenix, Ariz	Care of Chamber of Commerce.
District No. 13	Portland, Oreg	209 Medical Building.
	Spokane, Wash	309 Hutton Building.
	Pocatello, Idaho	220 First National Bank Building.
District No. 14	Little Rock, Ark	16 Bathurst Building.
	Fort Smith, Ark	212 First National Bank Building.
	Oklahoma City, Okla	210 Magnolia Petroleum Building, Seventh Street and Broadway.
	Tulsa, Okla	203 Lynch Building.
	Beaumont, Tex	509 Kyle Building.
	Fort Worth, Tex	111½ East Tenth Street.
	Houston, Tex	507 Prince Theater Building.
	Paris, Tex	Scott Building.
	San Antonio, Tex	511 Calcasius Building.
	Waco, Tex	1708 Amicable Life Building.
	El Paso, Tex	9 Chamber of Commerce Building.

7. *United States Shipping Board.*

RECRUITING SERVICE.

Irving L. Evans, director; E. D. Warner, assistant to director.

The activities of the Recruiting Service are divided into three main branches as follows: (1) The Navigation and Engineering Schools for training officers, including turbine engineers; (2) the Sea Training Bureau for training men below the grade of officers; (3) the Sea Service Bureau for placing on ships officers and men trained by the service, as well as those from other sources.

1. *Navigation and Engineering Schools.* [1]

Prof. A. F. Burton, in charge of instruction in navigation; Prof. E. F. Miller, in charge of instruction in engineering.

Section 1 (Eastport to Connecticut River; Harrington Pike, section chief, Boston, Mass.). Schools: Cambridge, Mass., and Rockland, Me.

Section 2 (Connecticut River to Cape Charles, Va.; R. Patterson, section chief, Philadelphia, Pa.). Schools: Baltimore, Md.; Brooklyn, N. Y.; Philadelphia, Pa.; New York City (Seamen's Church) Institute; Norfolk, Va.; Brooklyn (Polytechnic), N. Y.

Section 3 (Cape Charles to Cape Florida and entire Gulf Coast; C. H. Cugle, section chief, New Orleans, La.). Schools: New Orleans, La.; New Orleans, La. (Tulane University).

Section 4 (entire California seaboard; J. W. Jory, section chief, San Francisco, Calif.). Schools: San Francisco, Calif.; Berkeley, Calif. (University of California).

Section 5 (entire Washington and Oregon seaboard: J. H. Payne, section chief, Seattle, Wash.). Schools: Seattle, Wash.; Seattle (University of Washington).

Section 6 (Great Lakes district; P. G. Pettersen, section chief, Cleveland, Ohio). Schools: Chicago, Ill.; Cleveland, Ohio.

Turbine training (J. B. Norton, supervising engineer). Schools: General Electric, Schenectady, N. Y.; Westinghouse Electric & Manufacturing Co., Pittsburgh, Pa.

2. *Sea Training Bureau.*

Camp Stuart, Va.; (Shore Station, E. O. Patterson, supervisor): S. S. *Newton*; S. S. *Utoka*; S. S. *Sturgeon Bay*; S. S. *Alabat*.

Seattle, Wash. (Shore station, J. Howard Payne, assistant director): S. S. *Hollywood*.

San Francisco, Calif. (Shore station, J. W. Jory, supervisor): S. S. *Brookdale*.

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[1] Only men with satisfactory sea experience on deck are admitted to the navigation schools, and those with satisfactory engineering experience to the engineering schools. A course of instruction on the upkeep and operation of geared turbines is maintained by the Recruiting Service at the plants of the manufactures, and 30 men are kept continuously in these classes. A course is also given on electric drive.

3. *Sea Service Bureau.*[4]

AGENCIES.

Boston, Mass., H. Pike, agent; New York City, R. Patterson, agent; Philadelphia, Pa., W. G. Rice, agent; Baltimore, Md., F. H. Haines, agent; Norfolk, Va., J. W. S. Butt, agent (Newport News, Va., subagency); Savannah, Ga., F. Spencer, agent; Jacksonville, Fla., C. Sanders, agent; Tampa, Fla., Philip Shore, agent; New Orleans, La., C. H. Cugle, agent (Mobile, Ala. and Galveston, Tex., subagencies); San Francisco, Calif., J. W. Jory, agent (San Pedro, Calif., subagency); Seattle, Wash., J. H. Payne, agent (Astoria, Oreg., and Portland, Oreg., subagencies); Cleveland, Ohio, P. G. Pettersen, agent (Duluth, Minn., Detroit, Mich., and Chicago, Ill., subagencies).

8. *United States Geographic Board.*

C. Hart Merriam, chairman; Charles S. Sloane, secretary.

9. *Commission of Fine Arts.*

Charles Moore, chairman; Col. C. L. Ridley, U. S. A., secretary and executive officer.

IX.—PRINCIPAL STATE SCHOOL OFFICERS.

States and officers.	Official designation.	Address.
Alabama:		
John W. Abercrombie	State superintendent of education	Montgomery.
James N. Gunnels	Chief clerk	Do.
R. E. Tidwell	Assistant superintendent and director teacher-training.	Do.
R. E. Ledbetter	Rural-school agent	Do.
J. S. Lambert	do	Do.
P. W. Hodges	Certification secretary	Do.
W. L. Spencer	Supervisor secondary education	Do.
Olive Gray	Specialist in elementary education	Do.
Mary D. Pierce	Specialist in primary education	Do.
J. B. Hobdy	Director vocational education	Do.
D. J. Burleson	Supervisor vocational agriculture	Do.
L. J. E. Sindell	Supervisor of vocational trades and industries	Do.
Ivol Spafford	Supervisor vocational home economics	Do.
Clara Pitts	Reading circle secretary	Do.
Sarah Luther	Field secretary exceptional education and parent-teacher associations.	Do.
O. C. Bird	Director physical and health education	Do.
Alaska:		
Lester D. Henderson	Commissioner of education	Juneau.
Arizona:		
Elsie Toles	State superintendent of public instruction	Phoenix.
Frank Dykes	Assistant superintendent	Do.
R. H. H. Blome	State director of vocational education	Do.
Arkansas:		
J. L. Bond	State superintendent of public instruction	Little Rock.
N. M. Whaley	Deputy superintendent	Do.
W. R. Edwards	Assistant deputy superintendent	Do.
A. B. Hill	Supervisor of secondary schools	Do.
J. R. Grant	State agent of rural schools	Do.
W. E. Holbrook	do	Do.
J. A. Presson	State agent of rural schools for Negroes	Do.
California:		
Will C. Wood	Superintendent of public instruction	Sacramento.
Albert C. Olney	Commissioner of secondary schools	Do.
Mrs. Margaret S. McNaught	Commissioner of elementary schools	Do.
Edwin R. Snyder	Commissioner of industrial and vocational education.	Do.
Job Wood, jr.	Deputy superintendent	Do.
Maude I. Murchie	Supervisor of teacher-training courses in home economics.	Do.
Jeremiah B. Lillard	Supervisor of agricultural instruction	Do.
John C. Beswick	Supervisor of trade and industrial instruction	Do.
Clark W. Hetherington	Supervisor of physical education	Do.
Herbert R. Stolz	Assistant supervisor of physical education	Do.
George Hjelte	do	Do.
Winifred Van Hagen	do	Do.
Sam H. Cohn	Statistician	Do.
W. S. Dyas	Head of textbook department	Do.
Edna M. Strangland	Secretary	Do.
Canal Zone:		
A. R. Lang	Superintendent of schools	Balboa Heights.
F. X. Karrer	Assistant to superintendent	Do.
Alice Alexander	do	Do.
M. D. Nicholas	Supervisor of music	Do.
Frances E. B. Smith	Supervisor of penmanship	Do.

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[4] The Sea Service Bureau, during the fiscal year July 1, 1919, to June 30, 1920, placed on American vessels 160,863 officers and men; 65.7 per cent of this number were Americans; about 15 per cent of the total were graduates from the Shipping Board Recruiting Service.

IX.—PRINCIPAL STATE SCHOOL OFFICERS—Continued.

States and officers.	Official designation.	Address.
Colorado:		
Katherine L. Craig	State superintendent of public instruction	Denver.
Alice B. Clark	Deputy State superintendent	Do.
Earl G. Morand	State rural school supervisor	Do.
Nellie Corkish	Statistician	Do.
Connecticut:		
A. B. Meredith	Commissioner of education	Hartford.
F. J. Trinder	Director of vocational education	Do.
W. C. Kennedy	Supervisor of agricultural education	Winsted.
N. Searle Light	Director of supervision	Hartford.
W. S. Dakin	Inspector	West Hartford.
L. T. Garrison	do	Willimantic.
E. W. Ireland	do	Hartford.
F. E. Harrington	Director of evening and continuation schools	Do.
S. T. Brown	Supervisor of evening school instruction	New York, N. Y.
A. D. Simpson	School surveys	Hartford.
J. L. Meader	Statistics and research	Do.
R. C. Deming	Director of Americanization	New Haven.
Geo. R. Sturges	Director of attendance and employment work	Woodbury.
S. P. Willard	Agent	Colchester.
A. T. Wright	Chief Clerk	Hartford.
Delaware:		
A. R. Spaid	State commissioner of education	Dover.
John Shilling	Assistant commissioner	Do.
R. W. Heim	State director of vocational education	Newark.
L. C. Armstrong	State supervisor of agriculture	Dover.
Benjamin W. Johnson	State supervisor of trades and industries	Wilmington.
	State supervisor of home economics	Dover.
District of Columbia:		
F. W. Ballou	Superintendent of schools	Washington.
S. E. Kramer	Assistant superintendent	Do.
R. C. Bruce	do	Do.
Florida:		
W. N. Sheats	State superintendent of public instruction	Tallahassee.
J. C. Compton	Chief Clerk	Do.
R. L. Turner	State inspector of rural schools	Inverness.
J. M. Feagle	do	High Springs.
W. S. Cawthon	State high-school inspector	Gainesville.
J. H. Brinson	State agent for rural Negro schools	Jacksonville.
Georgia:		
M. L. Brittain	State supreintendent of schools	Atlanta.
I. S. Smith	State supervisor of rural schools (North Georgia)	Reidsville.
Geo. D. Godard	State supervisor of rural schools (South Georgia)	Milner.
J. O. Martin	State supervisor of rural schools (Middle Georgia)	Covington.
M. L. Duggan	Rural-school agent	Atlanta.
Joseph S. Stewart	State high-school inspector (University of Georgia)	Athens.
J. W. Stephens	State school auditor	Atlanta.
Walter B. Hill	Sepcial supervisor (for Negroes)	Do.
Paul Chapman	Agricultural supervisor	Athens.
L. M. Sheffer	Assistant agricultural supervisor	Do.
J. F. Cannon	Trade and industrial supervisor	Atlanta.
W. M. MacLaurine	Assistant Trade and industrial supervisor	Do.
Mary E. Creswell	Home economics supervisor	Athens.
Epsie Campbell	Assistant home economics supervisor	Do.
Hawaii:		
Vaughan MacCaughey	Superintendent of public instruction	Honolulu.
T. H. Gibson	Deputy superintendent	Do.
Daisy B. P. Smith	Secretary	Do.
Mrs. L. L. McCandless	Commissioner of public instruction	Do.
Elsie H. Wilcox	do	Lihue, Kauai.
L. G. Blackman	do	Honolulu.
D. C. Lindsay	do	Kahului, Maui.
Samuel P. Woods	do	Kohala.
W. H. Smith	do	Hilo.
Ken. C. Bryan	Territorial director industrial education	Honolulu.
Mrs. Jane Otremba	Territorial director domestic science and home making.	Do.
Mrs. Nancy Andrew	Territorial music director	Do.
Mrs. Esther W. Kelle	Director Hawaiian handicrafts	Do.
Mrs. Emma Nakuina	Director Hawaiian history and language	Do.
J. R. McCrillis	Director physical education	Do.
Idaho:		
Ethel E. Redfield	State superintendent of public instruction	Boise.
Retta F. Martin	Assistant State superintendent	Do.
Enoch A. Bryan	Commissioner of education	Do.
Melvin S. Lewis	Director of vocational education	Do.
Austin C. Price	Business agent and auditor	Do.
Illinois:		
Francis G. Blair	State superintendent of public instruction	Springfield.
John Calvin Hanna	State supervisor of high schools	Do.
Harry M. Thrasher	do	Do.
U. J. Hoffman	State supervisor of elementary schools	Do.
W. S. Booth	do	Do.
H. T. Swift	Chief clerk	Do.
W. E. White	Statistician	Do.

IX.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Indiana:		
Linnaeus N. Hines	State superintendent of public instruction	Indianapolis.
Benjamin J. Burris	Assistant superintendent	Do.
John S. Hubbard	Deputy	Do.
Robert K. Devricks	Manuscript clerk	Do.
	Director of vocational education	Do.
Z. M. Smith	Supervisor of agricultural education	Do.
Bertha Latta	Assistant in vocational education	Do.
Oscar H. Williams	Supervisor of teacher-training	Do.
E. B. Wetherow	High-school inspector	Do.
Bert Morgan	Clerk State teachers' retirement fund board	Do.
Iowa:		
P. E. McClenahan	State superintendent of public instruction	Des Moines.
A. L. Heminger	Deputy superintendent	Do.
H. C. Hollingsworth	Chief clerk	Do.
M. R. Fayram	Inspector normal training in high schools	Do.
George S. Dick	Inspector rural and consolidated schools	Do.
F. A. Welch	Inspector graded and high schools	Do.
Mae E. Francis	Inspector rural schools	Do.
O. H. Longwell	Director Iowa State placement bureau	Do.
W. H. Bender	Director of vocational education	Do.
J. V. Lynn	Supervisor trades and industries	Do.
E. S. Cramer	Assistant supervisor of agriculture	Do.
Lucy J. Cockburn	Director home economics	Do.
Kansas:		
Lorraine E. Wooster	State superintendent of public instruction	Topeka.
George A. Allen	Assistant superintendent	Do.
B. E. Lewis	High-school supervisor	Do.
Euna Arrasmith	do	Do.
May Cain	Rural-school supervisor	Do.
W. A. Vickers	do	Do.
Fred A. Seaman	Chief clerk	Do.
Kentucky:		
George W. Colvin	State superintendent of public instruction	Frankfort.
L. N. Taylor	Chief clerk	Do.
R. P. Green	State supervisor of high schools	Do.
J. V. Chapman	State supervisor of rural schools	Do.
F. C. Button	do	Do.
P. H. Hopkins	do	Do.
J. W. Carr	Director of physical training	Do.
Mrs. Abner Harris	State organizer	Do.
G. Ivan Barnes	Director of vocational and supervisor of agricultural education.	Do.
Louisiana:		
T. H. Harris	State superintendent of education	Baton Rouge.
C. A. Ives	State high-school inspector	Do.
John M. Foote	State rural-school supervisor	Do.
A. M. Hopper	Assistant rural school inspector	Do.
John E. Cox	do	Do.
C. F. Trudeau	Assistant State high-school inspector	Do.
Leo M. Favrot	State agent of rural schools for Negroes	Do.
A. C. Lewis	Assistant State agent of rural schools for Negroes	Do.
P. L. Gilbeau	State supervisor of agricultural schools	Do.
John R. Conniff	Chairman State teachers' examining committee and institute conductor.	Do.
Cleora C. Helbing	State supervisor of home economics	Do.
Clyde Mobley	Assistant supervisor of home economics	Do.
John E. Lombard	State director of physical education	Do.
J. G. Lee, jr.	State director of agricultural teacher-training	Do.
W. H. Tipton	Chief clerk	Do.
Maine:		
Augustus O. Thomas	State superintendent of public schools	Augusta.
G. W. Starkey	Deputy superintendent	Do.
Josiah W. Taylor	Agent for secondary education	Do.
H. A. Allan	Agent for rural education	Do.
Florence M. Hale	do	Do.
A. W. Gordon	General agent for schools in unorganized territory	Do.
P. W. Monohon	State director of vocational education	Do.
E. K. Jenkins	Supervisor of trades and industries	Gorham.
Herbert S. Hill	Supervisor of agriculture	Orono.
Bernice E. Bates	Chief clerk	Augusta.
Bernardine Cooney	Supervisor of household arts	Farmington.
Maryland:		
Albert S. Cook	State superintendent of schools	Baltimore.
George H. Reavis	Assistant State superintendent	Do.
S. M. North	Supervisor of high schools	Do.
Wm. J. Holloway	Supervisor of rural schools	Do.
J. W. Huffington	Supervisor of colored schools	Do.
	Supervisor of vocational education	Do.
William Burdick	Supervisor of physical education	Do.
T. L. Gibson	Supervisor of music	Do.
Merle S. Bateman	Credential clerk	Do.

IX.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Massachusetts:		
Payson Smith	State commissioner of education	Boston.
Frank W. Wright	Assistant commissioner and director of division of elementary and secondary education and normal schools.	Do.
Robert O. Small	Assistant commissioner and director of division of vocational education.	Do.
Clarence D. Kingsley	Supervisor of secondary education	Do.
Burr F. Jones	Supervisor of elementary education	Do.
Robert I. Bramhall	Agent for research and statistics	Do.
Harry E. Gardner	Agent for registration of teachers	Do.
James F. Hopkins	Director of art education	Do.
Rufus W. Stimson	Agent for agricultural schools and departments	Do.
Arthur S. Allen	Agent for industrial schools for men and boys	Do.
Edith B. Hunt	Agent for industrial schools for women and girls	Do.
Caroline E. Nourse	Assistant agent for household arts schools and departments.	Do.
Wm. D. Parkinson	Agent for vocational teacher-training	Do.
Franklin E. Heald	Agent for teacher-training for agricultural schools.	Amherst.
M. Norcross Stratton	Agent for teacher-training for industrial schools	Boston.
Anna A. Kloss	Agent for teacher-training for household arts schools.	Do.
Anna P. Hanrahan	Assistant agent for teacher-training for household arts schools.	Do.
Edna M. Sturtevant	....do	Framingham.
Carl E. Herrick	Agent for administration	Boston.
James A. Moyer	Director, division of university extension	Do.
Herbert A. Dallas	Agent for classes in industrial subjects	Do.
Dennis A. Dooley	Agent for class organization	Do.
Charles W. Hobbs	Editor and supervisor of instruction	Do.
John J. Mahoney	Supervisor of Americanization	Do.
Mary I. Guyton	Assistant agent in Americanization	Do.
Pauline R. Thayer	Director of division of immigration and Americanization.	Do.
Charles B. Hayes	Director of division of the blind	Do.
Charles F. D. Belden	Director of division of public libraries	Do.
Clayton L. Lent	Secretary of teachers' retirement board	Do.
Michigan:		
Thomas E. Johnson	Superintendent of public instruction	Lansing.
Horace Z. Wilber	Deputy superintendent	Do.
G. N. Otwell	Assistant superintendent	Do.
W. L. Coffey	....do	Do.
C. L. Goodrich	High-school inspector	Do.
Frances Farnham	County normal supervisor	Do.
Floyd A. Rowe	Physical-training director	Do.
Ida M. Huston	Chief clerk	Do.
Minnesota:		
J. M. McConnell	Commissioner of education	St. Paul.
P. C. Tonning	Deputy commissioner	Do.
E. M. Phillips	Director of vocational education and inspector of high schools.	Do.
George A. Selke	Inspector of rural schools	Do.
G. M. Cesander	Assistant inspector of rural schools	Do.
Anna Swenson	....do	Do.
R. B. MacLean	Inspector of elementary schools	Do.
H. E. Flynn	Inspector of teacher-training schools	Do.
J. E. Lunn	Assistant inspector of high and graded schools	Do.
B. M. Gile	Supervisor of agricultural education	Do.
G. A. McGarvey	Supervisor of trade and industrial education	Do.
Wylie B. McNeal	Supervisor of home-economics education	Do.
A. S. Challman	Inspector of buildings and director of special classes for defectives.	Minneapolis.
E. T. Critchett	Director teachers' employment bureau and secretary of teachers' retirement fund.	St. Paul.
Clara F. Baldwin	Director of libraries	Do.
Harriet A. Wood	Supervisor of school libraries and field organizer	Do.
Lillian E. Cook	Librarian	Do.
Margaret M. Doty	Reference librarian	Do.
Oscar M. Sullivan	Director of reeducation of injured persons	Do.
John O'Donnell	Placement officer	Do.
Christopher Lindahl	Accountant	Do.
Mississippi:		
W. F. Bond	State superintendent of public education	Jackson
J. W. Broom	Assistant superintendent of public education	Do.
J. T. Calhoun	State supervisor rural schools	Do.
H. M. Ivy	High-school inspector	Do.
Bura Hilbun	State supervisor of Negro schools	Collins.
F. J. Hubbard	Director of secondary agricultural education	Jackson
Patti M. Batson	Chief clerk	Do.

IX.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Missouri:		
Sam. A. Baker	State superintendent of public schools	Jefferson City.
J. Lucas Campbell	Chief clerk	Do.
W. S. Smith	Teacher-training inspector	Do.
Raymond Shoop	High-school inspector	Do.
Arthur A. Hoech	do	Do.
George W. Reavis	Rural-school inspector	Do.
J. H. Livingston	Statistician	Do.
Montana:		
May Trumper	State superintendent of public instruction	Helena.
Mina Petrashek	Deputy superintendent	Do.
S. L. Peterson	High school supervisor	Do.
Adelaide M. Ayer	Rural-school supervisor	Do.
Charles M. Reinoehl	do	Do.
G. B. Edwards	Director of vocational education	Do.
Lela L. Bryant	Clerk	Do.
Nebraska:		
John M. Matzen	State superintendent of public instruction	Lincoln.
John Speedie	Deputy superintendent of public instruction	Do.
Cora A. Thompson	Assistant superintendent of public instruction	Do.
Archer L. Burnham	Normal-training inspector	Do.
Frank R. Beers	Assistant normal-training inspector	Do.
I. N. Clark	Rural-school inspector	Do.
Lulu S. Wolford	Head certification department	Do.
Cecile Snapp	Secretary	Do.
Nevada:		
W. J. Hunting	State superintendent of public instruction	Carson City.
Charles Priest	Deputy superintendent of public instruction	Do.
Homer Derr	State director of vocational education	Do.
New Hampshire:		
E. W. Butterfield	Commissioner of education	Concord.
Harriet L. Huntress	Deputy commissioner	Do.
James N. Pringle	do	Do.
Maro S. Brooks	do	Do.
Walter M. May	do	Do.
Elizabeth M. Murphy	Supervisor of health	Do.
W. B. Cookingham	Supervisor of agriculture	Do.
John Bishop	Inspector child welfare	Do.
R. J. Mitchell	Inspector child labor	Newmarket.
R. H. Haran	do	Manchester.
Earle C. Gordon	Accountant	Concord.
New Jersey:		
Calvin N. Kendall	State commissioner of education	Trenton.
John Enright	Deputy commissioner and in charge of hearings in controversies and disputes.	Do.
L. L. Jackson	Assistant commissioner, secondary education	Do.
Edgar S. Pitkin	Assistant commissioner, elementary education	Do.
Wesley A. O'Leary	Assistant commissioner, industrial education, including agriculture.	Do.
E. A. Reuther	Assistant for the supervision of continuation schools	Do.
R. A. Campbell	Assistant in industrial education	Do.
J. Gould Spofford	Assistant for training teachers of trades and industries.	Do.
H. O. Sampson	Assistant in agricultural education	Do.
Iris Prouty O'Leary	Special assistant for women's vocational work	Do.
Clara H. Krauter	Assistant for training teachers of home economics	Do.
John J. McCarthy	Assistant in industrial education	Do.
Frederick W. Maroney	Instructor and director physical training and hygiene.	Do.
Lester A. Palmer	Assistant director physical training and hygiene	Do.
Marianna G. Packer	Instructor in physical training and hygiene	Do.
Herbert N. Morse	Business manager	Do.
Henry W. Huston	Auditor of school accounts	Do.
Charles McDermott	Inspector of buildings	Do.
John S. Mount	Inspector of accounts	Do.
New Mexico:		
Jonathan H. Wagner	State superintendent of public instruction	Santa Fe.
John V. Conway	Assistant superintendent of public instruction	Do.
Ruth Coleman Miller	State director of industrial education	Do.
E. D. Smith	Supervisor of agricultural education	Do.
A. B. Anderson	Supervisor of industrial education	Do.
Montana Hastings	Child psychologist	Do.
George Longee	Chief clerk	Do.
Eve Wientge	Certification clerk	Do.
New York:		
	State commissioner of education	Albany.
Frank B. Gilbert	Deputy commissioner and counsel	Do.
Augustus S. Downing	Assistant commissioner and director of professional education.	Do.
Charles F. Wheelock	Assistant commissioner for secondary education	Do.
George M. Wiley	Assistant commissioner for elementary education	Do.
James I. Wyer, jr	Director of State library	Do.
John M. Clarke	Director of science and State museum	Do.

IX.—PRINCIPAL STATE SCHOOL OFFICERS—Continued.

States and officers.	Official designation.	Address.
New York—Continued.		
Hiram C. Case	Chief of administration division	Albany.
James D. Sullivan	Chief of attendance division	Do.
William R. Watson	Chief of educational extension division	Do.
Avery W. Skinner	Examination and inspections division	Do.
James Sullivan	Director of archives and history division	Do.
Frank H. Wood	Chief of school buildings and grounds	Do.
Irwin Esmond	Chief of law division	Do.
Edna M. Sanderson	Vice director of library school	Do.
Sherman Williams	Chief of school libraries division	Do.
Alfred W. Abrams	Chief of visual instruction division	Do.
Lewis A. Wilson	Director of agricultural and industrial education	Do.
North Carolina:		
E. C. Brooks	State superintendent of public instruction	Raleigh.
W. H. Pittman	Chief clerk	Do.
L. C. Brogden	State agent for rural schools	Do.
N. C. Newbold	State agent for rural colored schools	Do.
A. T. Allen	Supervisor of teacher training	Do.
J. Henry Highsmith	Inspector of public high schools	Chapel Hill.
T. B. Attmore	Agent Rosenwald building campaign	Stonewall.
Elizabeth Kelly	Director schools for illiterates	Raleigh.
W. C. Crosby	Director bureau of community service	Do.
J. B. Williamson	Director of mechanics	Do.
Mrs. Claire S. Thomas	Film librarian	Do.
Sarah Sanders	Director physical education	Do.
T. E. Browne	Director of vocational education	West Raleigh.
Edna F. Coith	Supervisor home economics	Do.
R. H. Thomas	Supervisor of agriculture	Do.
G. W. Coggin	Supervisor of trades and industries	Do.
F. T. Selby	Teacher-training trades and industries	Do.
North Dakota:		
Minnie Nielson	State superintendent of public instruction	Bismarck.
E. J. Taylor	Deputy superintendent	Do.
Bertha R. Palmer	Assistant superintendent	Do.
C. L. Robertson	High-school inspector	Do.
Edward Erickson	Rural-school inspector	Do.
Martha P. Tatem	do	Do.
J. W. Riloy	do	Do.
Julia Peterson	Chief clerk	Do.
Ohio:		
Vernon M. Riegel	Superintendent of public instruction	Columbus.
W. B. Bliss	Assistant superintendent of public instruction	Do.
H. D. Swygert	Statistician	Do.
Geo. M. Morris	Chief clerk	Do.
T. H. Winters	Inspector teacher-training	Do.
C. E. Oliver	High-school inspector[1]	E. Palestine.
E. F. Warner	do	Bellevue.
F. C. Landsittel	do.[2]	Columbus.
George R. Twiss	do	Do.
Geo. H. Crow	do	Athens.
D. W. Pearce	do	Kent.
O. P. Clutts	do	Bowling Green.
Oklahoma:		
Robert H. Wilson	State superintendent of public instruction	Oklahoma.
E. N. Collette	Assistant superintendent	Do.
Ella H. Hunt	Agricultural assistant	Edmond.
C. M. Howell	High-school inspector	Do.
Richard Cloyd	do	Norman.
Marvin Hatchett	do	Oklahoma.
E. A. Duke	Rural-school supervisor	Do.
T. W. Smith	do	Do.
Pearl Hall	Chief clerk	Do.
Oregon:		
J. A. Churchill	State superintendent of public instruction	Salem.
W. M. Smith	Assistant superintendent	Do.
Marie Schwab	Secretary	Do.
J. E. Calavan	Industrial field worker	Oregon City.
E. E. Elliott	State director vocational education	Salem.
Pennsylvania:		
T. E. Finegan	State superintendent of public instruction	Harrisburg.
J. Geo. Becht	Deputy superintendent (higher education)	Do.
W. D. Lewis	Deputy superintendent (secondary schools)	Do.
Fred Engelhardt	Director administration bureau	Do.
C. W. Hunt	Assistant director administration bureau	Do.
W. M. Denison	Director attendance bureau	Do.
Wm. S. Taft	Assistant director attendance bureau	Do.
Mary Y. McReynolds	Director medical education and licensure	Do.
Mary F. Bogue	Director mothers' pension bureau	Do.
Lee Driver	Director rural education bureau	Do.
H. C. Eicher	Director school-buildings bureau	Do.
H. H. Baish	Director school employees' retirement bureau	Do.
Chas. D. Koch	Director school inspection	Do.

[1] Full-time.

[2] Half-time.

IX.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Pennsylvania—Continued.		
Albert L. Rowland	Director teacher bureau	Harrisburg.
L. H. Dennis	Director vocational education	Do.
Geo. A. Stearns	Supervisor and inspector of attendance	Do.
D. E. Crosley	do	Do.
J. K. Bowman	Supervisor and inspector agricultural schools	Do.
H. C. Fetterolf	do	Do.
M. Claire Snyder	Supervisor and inspector continuation schools	Do.
James G. Pentz	High-school inspector	Do.
G. C. L. Riemer	do	Do.
Lu M. Hartman	Supervisor and inspector of home economics	Do.
Anna G. Green	do	Do.
W. P. Loomis	Supervisor and inspector of industrial education	Do.
Paul E. Beck	Supervisor and inspector of drawing	Do.
Katharine A. Pritchett	Supervisor of nutrition	Do.
Jeanne M. Gray	Supervisor physical training for girls	Do.
Philippine Islands:		
Luther B. Bewley	Director of education	Manila.
Camilio Osias	First assistant director of education	Do.
John W. Osborn	Second assistant director of education	Do.
Carl M. Moore	Superintendent, Department of Mindanao and Sulu.	Do.
Jose A. De Kastro	Chief clerk	Do.
Wallace C. Magathan	Superintendent of property and accounts	Do.
North H. Foreman	Superintendent of agricultural instruction	Do.
Frank E. Vitz	Acting chief, academic division	Do.
H. Buffington Atkins	Acting chief, industrial division	Do.
Candido M. Alcazar	Industrial inspector	Do.
Jose Reyes	Chief records	Do.
Mariano del Rosario	Chief accountant	Do.
Ricardo Encarnacion	Disbursing officer	Do.
Alberto Delusung	Property officer	Do.
Porto Rico:		
Paul G. Miller	Commissioner of education	San Juan.
Carey Hickle	Assistant commissioner	Do.
Francisco Vizcarrondo	Secretary of department	Do.
Joseph C. Morin	General superintendent	Do.
Judson U. McGuire	do	Do.
Jose Gonzales Ginorio	General superintendent of Spanish	Do.
Elsie May Willsey	Supervisor of home economics	Do.
George C. Ure	Supervisor of manual arts	Do.
A. J. Sykes	Supervisor of agriculture	Do.
George A. Harriman	Chief, division of property and accounts	Do.
A. Gonzales Font	Chief, division of municipal school affairs	Do.
Rhode Island:		
Walter E. Ranger	Commissioner of education	Providence.
Emerson L. Adams	Assistant commissioner	Do.
Charles Carroll	Secretary and deputy for vocational education	Do.
John L. Alger	Inspector of high schools	Do.
Anne W. Congdon	Library visitor	Do.
Willian T. Spanton	Supervisor of agricultural education	Kingston.
George E. Adams	Director of teacher-training in agriculture	Do.
Ethel A. Wright	Supervisor of home economics education	Do.
Benj. T. Leland	Supervisor of industrial education	Providence.
Agnes M. Bacon	Supervisor of Americanization	Do.
South Carolina:		
J. E. Swearingen	State superintendent of education	Columbia.
E. D. Easterling	Chief clerk	Do.
W. A. Shealy	Mill school supervisor	Do.
P. W. Bethea	Rural school supervisor	Do.
B. L. Parkinson	State high-school inspector	Do.
Miss Wil Lou Gray	Supervisor of adult schools	Do.
J. B. Felton	Supervisor of Negro schools	Do.
Verd Peterson	Supervisor of agricultural instruction	Clemson College.
Chas. S. Doggett	Supervisor of trade and industrial education	Do.
R. E. Lee	State school architect	Do.
	Supervisor of vocational home economics	Rock Hill.
Mattie E. Thomas	Community school organizer	Columbia.
South Dakota:		
Fred L. Shaw	State superintendent of public instruction	Pierre.
Charles T. King	Deputy superintendent	Do.
S. K. Clark	Assistant superintendent	Do.
Gertrude Fishback	Second assistant superintendent	Do.
Fred E. Smith	High school supervisor and director of vocational education.	Do.
Ernest H. Noteboom	Rural school supervisor	Do.
M. M. Guhin	Director of Americanization and civic training	Do.
Gertrude Lynass	Assistant in Americanization and civic training	Do.
Eva R. Dawes	Supervisor of home economics	Do.
Helen R. Brelsford	Supervisor of certification	Do.
Ellen T. Dunlevy	Credential clerk	Do.
Ira W. Howell	State truant officer	Do.

IX.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Tennessee:		
Albert Williams	State superintendent of public instruction	Nashville.
B. O. Duggan	State high-school inspector	Do.
J. W. Brister	Associate high school inspector	Do.
J. B. Brown	State rural-school agent	Do.
Ollie H. Bernard	State rural-school supervisor	Do.
D. M. Clements	Agricultural supervisor	Do.
Edw. S. Maclin	Industrial supervisor	Do.
Martha Thomas	Supervisor home economics	Do.
Angeline Wofford	Director of physiology and hygiene	Do.
W. A. Bass	Chief clerk	Do.
Texas:		
Annie Webb Blanton	State superintendent of public instruction	Austin.
E. L. Dohoney	First assistant superintendent	Do.
Emma Mitchell	Second assistant superintendent	Do.
Katherine Gray	Third assistant superintendent	Do.
S. M. N. Marrs	Chief supervisor of high schools	Do.
J. D. Blackwell	Director of agricultural education	Do.
C. L. Davis	Assistant director of agricultural education	Do.
J. H. Hinds	do.	Do.
Agnes E. Harris	Director of home economics	Do.
Lillian Peek	Assistant director of home economics	Do.
N. S. Hunsdon	Director of industrial education	Do.
Dorothy Sells	Assistant director of industrial education	Do.
L. D. Borden	Chief supervisor of rural schools	Do.
L. W. Rogers	Chief of division of Negro schools	Do.
Mrs. J. B. Gay	Statistician	Do.
O. P. Basford	Auditor	Do.
Selby Atwell	Certificate clerk	Do.
T. G. Harris	Chairman and college examiner of State board of examiners.	Do.
Utah:		
George Thomas	State superintendent of public instruction	Salt Lake City.
E. J. Norton	Deputy superintendent	Do.
Mosiah Hall	State high-school inspector	Do.
Francis W. Kirkham	Director of vocational education	Do.
E. G. Gowans	State director of health education	Do.
Irvin S. Noall	State supervisor in trades and industries	Do.
I. B. Ball	State supervisor in agriculture	Do.
Jean Cox	State supervisor in home economics	Do.
Arch M. Thurman	State director of Americanization	Do.
Vermont:		
Clarence H. Dempsey	Commissioner of education	Montpelier.
H. O. Hutchinson	State supervisor of junior high schools	Burlington.
J. D. Whittier	Supervisor of elementary education	Do.
E. P. Hamilton	Executive clerk, State board	Montpelier.
Virginia:		
Harris Hart	State superintendent of public instruction	Richmond.
E. E. Worrell	State supervisor of rural schools	Do.
Arthur D. Wright	State supervisor of Negro schools	Do.
Thomas D. Eason	State supervisor of agricultural education	Do.
W. L. Prince	State supervisor of high schools	Do.
Rachel E. Gregg	State supervisor of teacher training	Do.
Raymond V. Long	State supervisor of trades and industries	Do.
Washington:		
Mrs. Josephine C. Preston	State superintendent of public instruction	Olympia.
Blanche A. Nagel	Assistant superintendent	Do.
Addie E. Dickinson	do.	Do.
W. U. Neeley	Deputy superintendent	Do.
Edwin Twitmyer	High-school inspector	Do.
Evelyn Spencer	Assistant rural education	Do.
Rose R. Fowler	Secretary State board of examiners	Do.
Mary Du Bois Fowler	Executive secretary	Do.
West Virginia:		
George M. Ford	State superintendent of free schools	Charleston.
Robert Clarke	Assistant State superintendent	Do.
L. L. Friend	Supervisor of high schools	Do.
R. I. Boudebush	Supervisor of rural schools	Do.
Geo. E. Hubbs	Supervisor of examinations	Do.
Wisconsin:		
C. P. Cary	State superintendent of public schools	Madison.
Carter Alexander	Assistant State superintendent	Do.
C. L. Harper	Second assistant State superintendent	Do.
O. S. Rice	Supervisor of school libraries	Do.
W. W. Theisen	Supervisor of educational measurements	Do.
F. C. Touton	Supervisor of high schools	Do.
T. W. Gosling	do.	Do.
A. B. Cook	Supervisor of day schools for the deaf and blind	Do.
H. W. Schmidt	Supervisor of manual training	Do.
Geo. H. Drewry	Supervisor of State graded schools	Do.
S. Miles Thomas	do.	Do.
W. T. Anderson	do.	Do.
Annie Reynolds	Supervisor of city grades and supervising teachers.	Do.

IX.—PRINCIPAL STATE SCHOOL OFFICERS—Continued.

States and officers.	Official designation.	Address.
Wisconsin—Continued.		
Maybell G. Bush	Supervisor of city grades	Madison.
Katherine McLaughlin	do	Do.
Helen Goodspeed	Supervisor of domestic science	Do.
Elizabeth L. Woods	Clinical psychologist and supervisor of exceptional classes.	Do.
Bertha R. Bergeld	Assistant librarian	Do.
Ruth Nerdum	Diploma and certificate clerk	Do.
Wyoming:		
Mrs. Katharine A. Morton	State superintendent of public instruction	Cheyenne.
Serofina Facinelli	Deputy superintendent of public instruction	Do.
	Commissioner of education and chief of certification division.	Do.
James R. Coxen	State director for vocational education	Do.

X.—EXECUTIVE OFFICERS OF STATE BOARDS OF EDUCATION.

Officers of the board.	Post-office address.	Other official title.
John W. Abercrombie chairman and executive officer.	Montgomery, Ala	State superintendent of education.
Thomas, Riggs, jr., president	Juneau, Alaska	Governor.
Thomas E. Campbell, chairman	Phoenix, Ariz	Do.
C. O. Case, secretary	do	State superintendent of public instruction.
J. L. Bond, chairman	Little Rock, Ark	Do.
B. W. Torreyson, secretary	Conway, Ark	
A. B. Hill, clerk	Little Rock, Ark	
E. P. Clarke, president	Riverside, Calif	
Will C. Wood, secretary	Sacramento, Calif	Superintendent of public instruction.
Katherine L. Craig, president	Denver, Colo	Do.
Alice B. Clark, secretary	do	Deputy State superintendent.
Marcus H. Holcomb, president	Southington, Conn	Governor.
F. S. Jones, chairman	New Haven, Conn	
A. B. Meredith, secretary	Hartford, Conn	Commissioner of Education.
George B. Miller, president	Wilmington, Del	
A. R. Spaid, secretary	Dover, Del	State commissioner of education
Abram Simon, president	Washington, D. C	
H. O. Hine, secretary	do	
Cary A. Hardee, president	Tallahassee, Fla	Governor.
W. N. Sheats, secretary	do	State superintendent of public instruction.
Hugh M. Dorsey, president	Atlanta, Ga	Governor.
M. L. Brittain, secretary and executive	do	State superintendent of schools.
Ramsay M. Walker, president	Wallace, Idaho	
Mrs. J. G. H. Graveley, secretary	Boise, Idaho.	
L. N. Hines, president	Indianapolis, Ind	Do.
E. U. Graff, secretary	do	
D. D. Murphy, president	Elkader, Iowa	
W. H. Gemmill, secretary	Des Moines, Iowa	
Lorraine Elizabeth Wooster, president	Topeka, Kans	Do.
George W. Colvin, chairman	Frankfort, Ky	State superintendent of public instruction.
E. L. Kidd, president	Ruston, La	
T. H. Harris, secretary	Baton Rouge, La	State superintendent of public education.
Henry M. Fitzhugh, president	Westminster, Md	President Western Maryland College.
Albert S. Cook, secretary	Baltimore, Md	State superintendent of public education.
Payson Smith, chairman	Boston, Mass	State commissioner of education.
Fred Jeffers, president	Detroit, Mich	
Thomas E. Johnson, secretary	Lansing, Mich	State superintendent of public instruction.
W. D. Willard, president	Mankato, Minn	
W. F. Bond, president	Jackson, Miss	State superintendent of public education.
J. W. Powers, secretary	do	Secretary of State.
Sam. A. Baker, president	Jefferson City, Mo	State superintendent of pubic schools
John L. Sullivan, secretary	do	Secretary of State.
S. V. Stewart, president	Helena, Mont	Governor.
May Trumper, secretary	do	State superintendent of public instruction.
Emmet D. Boyle, president	Carson City, Nev	Governor.
W. J. Hunting, secretary	do	State superintendent of public instruction.
Frank S. Streeter, chairman	Concord, N. H	
M. A. Rice, president	Atlantic Highlands, N. J.	

X.—Executive Officers of State Boards of Education—Continued.

Officers of the board.	Post-office address.	Other official title.
Calvin N. Kendall, secretary	Trenton, N. J	State commissioner of education.
O. A. Larrozola, president	Santa Fe, N. Mex	Governor.
Johnathan H. Wagner, secretary	do	State superintendent of public instruction.
Pliny T. Sexton, chancellor of the university.	Palmyra, N. Y	
——— ———, chief executive	Albany, N. Y	President of the university and State commissioner of education.
T. W. Bickett, president	Raleigh, N. C	Governor.
E. C. Brooks, secretary	do	State superintendent of public instruction.
George A. Totten, president [1]	Bismarck, N. Dak	
Charles Liessman, secretary [1]	do	
Alfred Vivian, president	Columbus, Ohio	Dean of College of Agriculture, (State University).
Vernon M. Riegel, secretary	do	Superintendent of public instruction.
R. H. Wilson, chairman	Oklahoma, Okla	Superintendent of public instruction.
L. Norman Duncan, secretary	do	
Ben W. Olcott, president	Salem, Oreg	Governor.
J. A. Churchill, secretary	do	State superintendent of public instruction.
T. E. Finegan, president and chief executive officer.	Harrisburg, Pa	Do.
R. L. Beeckman, president	Newport, R. I	Governor.
Frederick Rueckert, chairman	Providence, R. I	
Walter E. Ranger, secretary	do	Commissioner of education.
R. A. Cooper, chairman	Columbia, S. C	Governor.
J. E. Swearingen, secretary	do	State superintendent of education.
Fred L. Shaw, president and chief executive officer.	Pierre, S. Dak	Superintendent of public instruction.
Charles T. King, secretary	do	Deputy superintendent.
P. L. Harned, chairman	Clarksville, Tenn	
Albert Williams, secretery	Nashville, Tenn	State superintendent of public instruction.
W. P. Hobby, chairman	Austin, Tex	Governor.
Annie Webb Blanton, secretary	do	State superintendent of public instruction.
L. J. Muir, chairman	Salt Lake City, Utah	Do.
J. A. Widtsoe, secretary	do	President University of Utah.
E. J. Norton, assistant secretary	do	Deputy superintendent.
E. P. Hamilton, executive clerk	Montpelier, Vt	
Harris Hart, president	Richmond, Va	State superintendent of public instruction.
J. N. Hillman, secretary	do	
John Crosby, auditor	do	
Mrs. Josephine C. Preston, president	Olympia, Wash	Do.
George M. Ford, president	Charleston, W. Va	State superintendent of free schools.
J. F. Marsh, secretary	do	
Herman Grotophorst, president	Madison, Wis	
E. A. Fitzpatrick, secretary	do	
James Morgan, president	Cheyenne, Wyo	
A. A. Slade, secretary	do	Commissioner of education.

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[1] Called the State Board of Administration and has charge of the educational, charitable, and penal institutions of the State.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS.

County.	County superintendent.	County.	County superintendent.
ALABAMA.		ALABAMA—con.	
Autauga	Mrs. R. L. Faucett, Prattville.	Colbert	J. T. McKee, Tuscumbia.
Baldwin	S. M. Tharp, Bay Minette.	Conecuh	W. R. Bennett, Evergreen.
Barbour	P. A. McDaniel, jr., Clayton.	Coosa	H. H. King, Rockford.
Bibb	H. H. Jones, Centerville.	Covington	Chas. Baker, Andalusia.
Blount	A. L. Head, Oneonta.	Crenshaw	T. A. Capps, Luverne.
Bullock	F. B. Haynes, Union Springs.	Cullman	J. A. Keller, Cullman.
Butler	P. B. Pepper, Greenville.	Dale	R. L. Marchman, Newton.
Calhoun	S. B. Gibson, Anniston.	Dallas	D. M. Callaway, Selma.
Chambers	G. M. Barnett, Lafayette.	Dekalb	J. M. Tucker, Fort Payne.
Cherokee	John W. Browder, Center.	Elmore	G. H. Howard, Wetumpka.
Chilton	H. L. Foshee, Clanton.	Escambia	R. H. Southerland, Brewton.
Choctaw	Zac Rogers, Butler.	Etowah	F. P. Murphy, Gadsden.
Clarke	J. F. Gillis, Grove Hill.	Fayette	R. L. Reaves, Fayette.
Clay	W. T. Harwell, Ashland.	Franklin	John R. Guin, Russellville.
Cleburne	G. B. Boman, Heflin.	Geneva	B. H. Boyd, Hartford.
Coffee	G. C. Bowden, Elba.	Greene	W. P. Archibald, Knoxville.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.	County.	County superintendent.
ALABAMA—con.		ALABAMA—con.	
Hale	W. C. Willburn, Moundville.	Montgomery	A. L. Harman, Montgomery.
Henry	O. E. Tompkins, Abbeville.	Morgan	E. L. Hays, Albany.
Houston	C. W. Johnson, Dothan.	Perry	W. R. Carothers, Marion.
Jackson	Jesse Wheeler, Scottsboro.	Pickens	W. H. Storey, Carrollton.
Jefferson	N. R. Baker, Birmingham.	Pike	Mrs. J. M. Sanders, Troy.
Lamar	G. S. Smith, Vernon.	Randolph	J. N. Word, Wedowee.
Lauderdale	D. O. Warren, Florence.	Russell	H. B. Hamner, Seale.
Lawrence	E. M. Hodson, Moulton.	Shelby	S. P. Williamson, Sterrett.
Lee	W. Y. Fleming, Opelika.	St. Clair	Geo. W. Floyd, Ashville.
Limestone	M. K. Clements, Athens.	Sumter	R. B. Callaway, Livingston.
Lowndes	J. A. Coleman, Hayneville.	Talladega	D. A. McNeill, Talladega.
Macon	W. B. Riley, Tuskegee.	Tallapoosa	J. D. Lane, Dadeville.
Madison	S. R. Butler, Huntsville.	Tuscaloosa	D. L. Smith, Tuscaloosa.
Marengo	Geo. M. Watson, Linden.	Walker	J. Alex Moore, Jasper.
Marion	T. D. Brooks, Hamilton.	Washington	C. C. Smith, Chatom.
Marshall	E. O. Creel, Guntersville.	Wilcox	O. C. Weaver, Camden.
Mobile	S. S. Murphy, Mobile.	Winston	A. B. Curtis, Double Springs.
Monroe	Geo. A. Harris, Monroeville.		

District.	District superintendents of schools for natives.	District.	District superintendents of schools for natives.
ALASKA.		ALASKA—con.	
Northwestern dist.	Jean Dupertuis, Noorvik.	Southwestern dist.	Arthur H. Miller, Anchorage.
Western dist.	John H. Kilbuck, Akiak (P. O. Bethel).	Southeastern dist.	C. W. Hawkesworth, Juneau.
Upper Yukon dist.	Benj. B. Mozee, Tanana.	Seward Peninsula dist.	Ebenezer D. Evans, Nome.

County.	County superintendent.	County.	County superintendent.
ARIZONA.		ARKANSAS—con.	
Apache	Mrs. Nancy Gibbons, St. Johns.	Dallas	M. P. Morton, Fordyce.[1]
Cochise	....	Desha	L. M. Gary, Dumas.
Coconino	Charlotte Acker, Flagstaff.	Drew	E. C. Robertson, Selma.[1]
Gila	Lucy Nash, Globe.	Faulkner	A. A. Parsons, jr., Mount Vernon.[1]
Graham	S. C. Heywood, Safford.		
Greenlee	Jessie Billingsley, Clifton.	Franklin	W. I. Agee, Ozark.
Maricopa	A. L. Jones, Phoenix.	Fulton	H. E. Watson, Salem.[1]
Mohave	Mrs. R. A. Lassell, Kingman.	Garland	Garnett Broughton, Hot Springs.
Navajo	Joseph Peterson, Holbrook.		
Pima	Vera Z. Shurtz, Tucson.	Grant	E. F. McDonald, Sheridan.[1]
Pinal	Lola Le Baron, Florence.	Greene	J. A. Walden, Paragould.[1]
Santa Cruz	Mrs. Josephine Saxon, Nogales.	Hempstead	A. L. Propps, Columbus.[1]
Yavapai	W. Curtis Miller, Prescott.	Hot Spring	J. L. Pratt, Malvern.[1]
Yuma	Nora E. Morrow, Yuma.	Howard	A. L. Merrill, Nashville.[1]
		Independence	S. E. Wells, Sulphur Rock.[1]
ARKANSAS.		Izard	T. H. Linn, Melbourne.
		Jackson	G. E. Land, Tuckerman.
Arkansas	J. M. Henderson, jr., De Witt.	Jefferson	W. P. Keith, Pine Bluff.
Ashley	D. C. Hastings, Crossett.[1]	Johnson	J. W. Sallis, Clarksville.
Baxter	W. E. Hitchcock, Norfolk.[1]	Lafayette	J. F. Bright, Lewisville.
Benton	F. A. Wood, Bentonville.	Lawrence	Sloan Rainwater, Imboden.[1]
Boone	R. B. Gaston, Harrison.	Lee	J. A. Hudson, Marianna.
Bradley	E. W. McGough, Warren.[1]	Lincoln	W. R. Stephens, jr., Star City.[1]
Calhoun	W. A. Wilson, Thornton.[1]	Little River	L. F. Wheelis, Richmond.
Carroll:		Logan:	
Eastern dist.	W. M. Smith, Berryville.[1]	Southern dist.	G. E. Lipe, Ozark, R. 4.
Western dist.	M. L. McCall, Eureka Springs.	Northern dist.	H. G. Thomason, Magazine.[1]
Chicot	D. T. Henderson, Lake Village.	Lonoke	W. C. Davis, Lonoke.
Clark	W. F. Dollarhide, Amity.[1]	Madison	B. F. Johnson, Japton.[1]
Clay:		Marion	L. E. Briggs, Yellville.[1]
Eastern dist.	George M. Dodd, Rector.[1]	Miller	T. V. Reid, Texarkana.
Western dist.	W. W. Henry, Corning.[1]	Mississippi	W. M. Crow, Blytheville.
Cleburne	B. F. Jordan, Heber Springs.	Monroe	W. E. Phipps, Clarendon.
Cleveland	S. P. O'Neill, Rison.[1]	Montgomery	Ernest Berry, Mount Ida.
Columbia	V. M. Hardin, Waldo.[1]	Nevada	C. M. Hirst, Prescott.[1]
Conway	T. L. Haynes, Morrilton.	Newton	J. W. Henderson, Yardelle.
Craighead	E. B. Barrett, Jonesboro.	Ouachita	C. D. Umstead, Buena Vista.
Crawford	H. W. Shaffer, Van Buren.	Perry	W. B. Loudermilk, Perry.
Crittenden	T. P. Johnson, Earle.	Phillips	L. P. Anderson, Marvell.
Cross	H. L. Lessenberry, Wynne.	Pike	G. C. Floyd, Glenwood.[1]

[1] County examiner.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.
ARKANSAS—con.	
Poinsett	H. B. Thorn, Harrisburg.
Polk	W. H. Morden, Mena.
Pope	H. A. Rushing, Atkins.[1]
Prairie	J. J. Nall, Des Arc.
Pulaski	G. R. Hopkins, Little Rock.[1]
Randolph	R. A. Mock, Biggers.[1]
Saline	W. A. Jackson, Benton.[1]
Scott	G. C. Ellis, Waldron.
Searcy	J. M. McCall, Marshall.
Sebastian	L. M. Redwine, Greenwood.
Sevier	L. E. Quinn, Dequeen.
Sharp	J. W. Taylor, Poughkeepsie.[1]
St. Francis	J. M. Wilson, Forest City.
Stone	E. R. Hinkle, Lexington.[1]
Union	Perry Nelson, Wesson.[1]
Van Buren	O. M. Jennings, Choctaw.[1]
Washington	W. F. Buck, Fayetteville.
White	J. W. Henry, Searcy.
Woodruff	W. N. Wilkes, Augusta.
Yell	T. A. Wright, Dardanelle
CALIFORNIA.	
Alameda	Geo. W. Frick, Oakland.
Alpine	Mrs. Eugenia M. Bruns, Sheridan, Nev.
Amador	Mrs. Sabra Greenhalgh, Jackson.
Butte	Mrs. Pearle Rutherford, Oroville.
Calaveras	Teresa Rivara, San Andreas.
Colusa	Perle Sanderson, Colusa.
Contra Costa	Wm. H. Hanlon, Martinez.
Del Norte	Jos. M. Hamilton, Crescent City.
Eldorado	E. J. Fitzgerald, Placerville.
Fresno	Clarence W. Edwards, Fresno.
Glenn	S. M. Chaney, Willows.
Humboldt	Robert A. Bugbee, Eureka
Imperial	A. P. Shibley, El Centro.
Inyo	Mrs. M. A. Clarke, Bishop.
Kern	L. E. Chenoweth, Bakersfield.
Kings	Miss M. L. Richmond, Hanford.
Lake	Minerva Ferguson, Lakeport.
Lassen	Mrs. Julia Norwood, Susanville.
Los Angeles	Mark Keppel, Los Angeles.
Madera	Craig Cunningham, Madera.
Marin	Jas. B. Davidson, San Rafael.
Mariposa	John L. Dexter, Mariposa.
Mendocino	Roy Good, Ukiah.
Merced	Mrs. Belle S. Gribi, Merced.
Modoc	Mrs. Nettie B. Harris, Alturas.
Mono	Mildred Gregory, Bodie.
Monterey	Louise Mignon, Salinas.
Napa	Lena A. Jackson, Napa.
Nevada	Elizabeth M. Richards, Nevada City.
Orange	R. P. Mitchell, Santa Ana.
Placer	Irene Burns, Auburn.
Plumas	Mrs. Kate I. Donnelley, Quincy.
Riverside	Ira C. Landis, Riverside.
Sacramento	Carolyne M. Webb, Sacramento.
San Benito	W. J. Cagney, Hollister.
San Bernardino	Mrs. Grace C. Stanley, San Bernardino.
San Diego	F. F. Martin, San Diego.
San Francisco	Alfred Roncovieri, San Francisco.
San Joaquin	John W. Anderson, Stockton.
San Luis Obispo	Robert L. Bird, San Luis Obispo.
San Mateo	Roy W. Cloud, Redwood City.
Santa Barbara	A. S. Pope, Santa Barbara.
Santa Clara	Agnes E. Howe, San Jose.
Santa Cruz	Cecil M. Davis, Santa Cruz.
CALIFORNIA—con.	
Shasta	Mrs. Charlotte Cunningham, Redding.
Sierra	Belle Alexander, Downieville.
Siskiyou	Mrs. Kate E. Horn, Yreka.
Solano	Dan H. White, Fairfield.
Sonoma	Ben Ballard, Santa Rosa.
Stanislaus	A. G. Elmore, Modesto.
Sutter	Lizzie Vagedes, Yuba City.
Tehama	Mamie B. Lang, Red Bluff.
Trinity	Lucy Young, Weaverville.
Tulare	J. E. Buckman, Visalia.
Tuolumne	G. P. Morgan, Sonora.
Ventura	Mrs. Blanche T. Reynolds, Ventura.
Yolo	Harriett S. Lee, Woodland.
Yuba	Jennie Malaley, Marysville.
COLORADO.	
Alamosa	Mrs. Elizabeth Farnham, Alamosa.
Adams	Helen Lamb, Brighton.
Arapahoe	Mrs. Sada R. Wilson, Littleton.
Archuleta	Mrs. Alice Noland, Pagosa Springs.
Baca	Margaret E. Jackson, Springfield.
Bent	Allie V. Richmond, Las Animas.
Boulder	E. D. Webb, Boulder.
Chaffee	Mrs. Rosa W. Ridgeway, Buena Vista.
Cheyenne	Agnes Nickerson, Cheyenne Wells.
Clear Creek	Mrs. Elizabeth Gleason, Idaho Springs.
Conejos	L. H. Mortensen, Sanford.
Costilla	Mrs. Elizabeth J. Dugan, Mesita.
Crowley	R. E. Rhine, Ordway.
Custer	Mrs. Lloyd Wright, Westcliffe.
Delta	Mrs. Grace Cummings, Delta.
Denver	Mrs. Helen M. Wixon, Denver.
Dolores	Mrs. Bessie Custiss, Rico.
Douglas	Mrs Maude Hoskins, Castle Rock.
Eagle	Ollie Graham, Rodcliff.
Elbert	Minerva McCarty, Kiowa.
El Paso	Mrs. Inez Johnson Lewis, Colorado Springs.
Fremont	Mrs.Carrie T. Anthony, Canon City.
Garfield	Mrs. Nellie Brown, Glenwood.
Gilpin	Mrs. Edith Williams, Central City.
Grand	Mrs. J. A. Brown, Fraser.
Gunnison	Verna Waterman, Gunnison.
Hinsdale	Mrs. Lucy Beam, Lake City.
Huerfano	Mrs. Martha Thorne, Walsenburg.
Jackson	Mrs. Minnie Bock, Walden.
Jefferson	Mrs. Myrtle S. Combs, Golden.
Kiowa	Florence M. Barnard, Eads.
Kit Carson	Jessie Magee Gray, Burlington.
Lake	Mrs. Mary C. Clark, Leadville.
La Plata	Nell McCartey, Durango.
Larimer	Emma T. Wilkins, Fort Collins.
Las Animas	Elmore Floyd, Trinidad.
Lincoln	Miss Lennie Beavers, Hugo.
Logan	Flora A. Allison, Sterling.
Mesa	Mrs. Elizabeth Hinton, Grand Junction.
Mineral	Mrs. Mary N. Oates, North Creede.
Moffat	Mrs. Laura K. Canon, Craig.
Montezuma	Lola Taylor, Cortez.

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[1] County examiner.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.	County.	County superintendent.
COLORADO—contd.		COLORADO—contd.	
Montrose	Emma Fall, Montrose.	Routt	Mrs. Emma H. Peck, Hayden.
Morgan	Mrs. C. P. Cochran, Fort Morgan.	Saguache	Katie Newcomb, Saguache.
Otero	R. D. McClintock, La Junta.	San Juan	Mrs. Mary B. Hodges, Silverton.
Ouray	Mrs. Anna H. Ross, Ouray.	San Miguel	Blanche McCray, Telluride.
Park	Mrs. Annie F. Powless, Fairplay.	Sedgwick	Emma Carlson, Julesburg.
Phillips	Chas. R. Peters, Holyoke.	Summit	Mrs. Melissa Hayden, Breckenridge.
Pitkin	Ethel Higinbotham, Aspen.	Teller	Mrs. Nellie Slusher, Cripple Creek.
Prowers	Mrs. Minnie A. Utter, Lamar.	Washington	Mrs. Myrtle Crawford, Akron.
Pueblo	Mrs. Lillie O. Baker, Pueblo.	Weld	C. W. Martin, Greeley.
Rio Blanco	Mrs. Goldie M. Stephenson, Meeker.	Yuma	Mrs. Jessie Moore, Wray.
Rio Grande	Carrie Deitrich, Monte Vista.		

Towns.	Supervisors.	Towns.	Supervisors.
CONNECTICUT.[2]		CONNECTICUT—continued.	
Ashford, Canterbury, Eastford, Pomfret.	A. W. Greer, Willimantic.	Cornwall, Kent, Sharon.	H. M. Jeffords, Kent.
Avon, Burlington, Farmington.	L. S. Mills, 58 East Main St., Plainville.	Coventry, Lebanon, Mansfield.	A. B. Lord, Box 232, Willimantic.
Barkhamsted, Colebrook, Hartland, New Hartford.	C. W. Maddocks, 165 Main St., Winsted.	Durham, East Hampton, Portland.	J. F. Connolly, 56 High St., Middletown.
Beacon Falls, Oxford, Southbury, Wolcott.	I. B. Dunfield, 40 Silver St., Waterbury.	East Granby, Saybrook.	W. S. Dakin, 17 Westland Ave., West Hartford.
Berlin, Newington	B. R. Showalter, Berlin.	East Lyme, Lyme, North Branford, Salem.	George R. Gove, Niantic.
Bethany, Goshen, Harwinton, Prospect, Warren.	R. N. Brown, Thomaston.	Easton, Monroe, Trumbull, Weston.	F. W. Knight, 273 Wayne St., Bridgeport.
Bethlehem, Watertown, Woodbury.	G. S. Swift, Watertown.	Hampton, Scotland.	N. S. Light, 138 Edgewood St., Hartford.
Bloomfield, Wethersfield.	W. H. Mandrey, 25 Brookline Avo., Hartford.	Killingsworth, North Stonington.	F. J. Penley, 225 Retreat Ave., Hartford.
Bolton, Ellington, Somers, Tolland.	L. C. Staples, Ellington.	Ledyard, Lisbon, Preston, Voluntown.	C. R. Stone, 28 Perkins Ave., Norwich.
Bozrah, Columbia, Franklin, Sprague.	F. W. Porter, The Ridges, Willimantic, R. F. D.	Madison	A. D. Simpson, 71 Warrenton Ave., Hartford.
Bridgewater, Brookfield, New Fairfield, Redding, Wilton.	H. D. Sylvester, Danbury.	Middlebury, Old Saybrook.	J. L. Meader, 190 Sigourney St., Hartford.
Canaan, North Canaan, Salisbury.	W. M. Teague, Canaan.	Morris, Roxbury, Sherman, Washington.	O. E. Lowell, 55 Church St., New Milford.
Canton, Granby	W. M. Strong, Collinsville.	Rocky Hill, Suffield.	H. B. Chapman, Box 7, Suffield.
Cheshire, Middlefield, North Haven, Old Lyme.	D. C. Allen, North Haven.	Sterling, Woodstock, Union.	F. T. Wilson, South Woodstock.
Chester, Cromwell, Haddam.	A. L. Young, Roberts St., Middletown.	Westbrook	E. Ward Ireland, 35 Hebron St., Hartford.
Colchester, Hebron, Marlboro.	H. S. Libby, South Main St., Colchester.	Willington	L. T. Garrison, Selden St., Willimantic.

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[2] For superintendents of districts, towns, and cities having a population of 2,500 or more, see p. 66.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.
DELAWARE.	
Kent	H. V. Holloway, Dover.
New Castle	Wilbur H. Jump, Wilmington.
Sussex	Ernest J. Hardesty, Georgetown.
FLORIDA.	
Alachua	E. R. Simmons, Gainesville.
Baker	J. D. Dugger, Macclenny.
Bay	F. M. Nelson, Panama City.
Bradford	E. R. Poppell, Starke.
Brevard	S. J. Overstreet, Titusville.
Broward	J. S. Rickards, Fort Lauderdale.
Calhoun	J. Flake Durham, Blountstown.
Citrus	H. J. Dame, Inverness.
Clay	G. J. North, Green Cove Springs.
Columbia	James R. Lites, Lake City.
Dade	R. E. Hall, Miami.
De Soto	P. G. Shaver, Arcadia.
Duval	F. A. Hathaway, Jacksonville.
Escambia	A. S. Edwards, Pensacola.
Flagler	Ed. Johnson, Bunnell.
Franklin	A. A. Core, Apalachicola.
Gadsden	C. H. Gray, Quincy.
Hamilton	J. A. Jackson, Jasper.
Hernando	R. R. Ray, Brooksville.
Hillsborough	J. E. Knight, Tampa.
Holmes	M. R. Robison, Bonifay.
Jackson	C. W. Lockey, Marianna.
Jefferson	S. H. Taylor, Monticello.
Lafayette	J. Homer Kelly, Mayo.
Lake	W. T. Kennedy, Umatilla.
Lee	J. D. McFerron, Fort Myers.
Leon	F. S. Hartsfield, Tallahassee.
Levy	W. F. Osteen, Bronson.
Liberty	R. E. Turner, Hosford.
Madison	G. W. Tedder, Madison.
Manatee	B. D. Gullett, Bradentown.
Marion	W. D. Carn, Ocala.
Monroe	Virgil S. Lowe, Key West.
Nassau	L. L. Owens, Fernandina.
Okaloosa	Will C. Pryor, Crestview.
Okeechobee	R. E. Hamrick, Okechobee.
Orange	A. B. Johnson, Orlando.
Osceola	C. E. Yowell, Kissimme.
Palm Beach	W. E. Keen, West Palm Beach.
Pasco	J. W. Sanders, Dade City.
Pinellas	Dixie M. Hollins, Clearwater.
Polk	John A. Moore, Bartow.
Putnam	C. H. Price, Palatka.
St. Johns	D. D. Corbett, St. Augustine.
St. Lucie	E. E. Smith, Fort Pierce.
Santa Rosa	R. B. Hobbs, Milton.
Seminole	T. W. Lawton, Sanford.
Sumter	G. H. Tompkins, Wildwood.
Suwanee	J. W. O'Hara, Live Oak.
Taylor	Festus S. Jackson, Perry.
Volusia	C. R. M. Sheppard, De Land.
Wakulla	C. K. Allen, Sopchoppy.
Walton	J. J. Kennedy, De Funiak Springs.
Washington	J. T. Hightower, Vernon.
GEORGIA.	
Appling	H. J. Parker, Baxley.
Atkinson	Saukey Booth, Pearson.
Bacon	Geo. A. Taylor, Alma.
Baker	J. H. Hall, Newton.
Baldwin	Peter N. Bivins, Milledgeville.
Banks	J. T. Wise, Baldwin.
Barrow	W. M. Holsenbeck, Winder.
Bartow	J. W. Jackson, Cartersville.
Ben Hill	J. H. Bullard, Fitzgerald.
Berrien	S. J. Baker, Nashville.
Bibb	C. H. Bruce, Macon.
Bleckley	H. E. Harville, Cochran.
Brooks	John F. McCall, Quitman.
Bryan	Edward Benton, Pembroke.
GEORGIA—contd.	
Bulloch	B. R. Olliff, Statesboro.
Burke	H. C. Daniel, Waynesboro.
Butts	Hugh Mallet, Jackson.
Calhoun	H. T. Singleton, Edison.
Camden	T. E. Casey, St. Marys.
Campbell	W. H. McLarin, Fairburn.
Candler	M. H. Williams, Metter.
Carroll	V. D. Whatley, Carrollton.
Catoosa	S. J. Bowman, Ringgold.
Charlton	F. E. Brock, Folkston.
Chatham	C. B. Gibson, Savannah.
Chattahoochee	C. N. Howard, Cusseta.
Chattooga	S. E. Jones, Summerville.
Cherokee	T. A. Doss, Canton.
Clarke	T. H. Dozier, Athens.
Clay	E. R. King, Fort Gaines.
Clayton	W. L. Gilbert, Jonesboro.
Clinch	J. O. Rodgers, Homerville.
Cobb	Bernard Awtrey, Marietta.
Coffee	J. Gordon Floyd, Douglas.
Colquitt	O. A. Thaxton, Moultrie.
Columbia	J. L. Weeks, Appling.
Cook	J. C. Thomas, Adell.
Coweta	J. M. Starr, Newman.
Crawford	J. F. Dickey, Musella.
Crisp	J. W. Bivins, Cordele.
Dade	S. J. Hale, Trenton.
Dawson	A. W. Vandiviere, Dawsonville.
Decatur	J. B. L. Barber, Bainbridge.
Dekalb	R. E. Carroll, Decatur.
Dodge	M. W. Harrell, Eastman.
Dooly	J. M. Royal, Vienna.
Dougherty	S. R. De Jarnette, Albany.
Douglas	G. T. McLarty, Douglasville.
Early	E. A. Evans, Blakely.
Echols	R. W. Touchton, Statenville.
Effingham	A. E. Bird, Guyton.
Elbert	T. J. Cleveland, Elberton.
Emanuel	Robert E. Rountree, Swainsboro.
Evans	R. M. Girardeau, Claxton.
Fannin	F. L. Cochran, Blue Ridge.
Fayette	E. E. Thornton, Fayetteville.
Floyd	W. C. Rash, Rome.
Forsyth	A. C. Kennemore, Cumming.
Franklin	E. McDuffie, Carnesville.
Fulton	J. W. Simmons, Atlanta.
Gilmer	J. S. Hudson, Ellijay.
Glascock	J. P. Allen, Mitchell.
Glynn	Chas. E. Dryden, Brunswick.
Gordon	Ernest Dillard, Calhoun.
Grady	J. S. Weathers, Cairo.
Greene	W. A. Purks, White Plains.
Gwinnett	C. R. Ware, Lawrenceville.
Habersham	Arthur Sisk, Clarksville.
Hall	J. D. Underwood, Gainesville.
Hancock	C. W. Moran, Sparta.
Haralson	John W. White, Buchanan.
Harris	Tom Wisdom, Chipley.
Hart	W. B. Morris, Hartwell.
Heard	W. E. Denney, Franklin.
Henry	T. J. Horton, McDonough.
Houston	F. M. Greene, Perry.
Irwin	J. W. Weaver, Ocilla.
Jackson	L. F. Elrod, Jefferson.
Jasper	J. M. Elizer, Monticello.
Jeff Davis	J. A. Walker, Hazelhurst.
Jefferson	Paul Pressly, Louisville.
Jenkins	W. V. Lanier, Millen.
Johnson	A. J. M. Robinson, Wrightsville.
Jones	E. W. Sammons, Gray.
Laurens	Z. Whitehurst, Dublin.
Lee	S. J. Powell, Leesburg.
Liberty	J. E. Groover, Hinesville.
Lincoln	T. L. Perryman, Lincolnton.
Lowndes	M. L. Strong, Valdosta.
Lumpkin	C. Shulz, Dahlonega.
McDuffie	M. W. Dunn, Thomson.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.
GEORGIA—contd.	
McIntosh	W. A. Branson, Darien.
Macon	J. P. Nelson, Oglethorpe.
Madison	C. B. Ayres, Danielsville.
Marion	W. E. Drane, Buena Vista.
Meriwether	W. S. Howell, Greenville.
Miller	N. L. Stapleton, Colquitt.
Milton	John R. Holloway, Alpharetta.
Mitchell	G. E. West, Camilla.
Monroe	A. M. Zellner, Forsyth.
Montgomery	T. B. Conner, Mount Vernon.
Morgan	W. C. Thompson, Madison.
Murray	J. W. Colvard, Crandall.
Muscogee	J. L. Bond, Columbus.
Newton	G. C. Adams, Covington.
Oconee	J. M. McRee, Watkinsville.
Oglethorpe	M. S. Weaver, Lexington.
Paulding	C. A. Roberts, Dallas.
Pickens	G. F. Compton, Jasper.
Pierce	J. S. Pittman, Blackshear.
Pike	F. L. Adams, Zebulon.
Polk	John W. Sutton, Cedartown.
Pulaski	A. W. Fountain, Hawkinsville.
Putnam	W. C. Wright, Eatonton.
Quitman	H. M. Kaigler, Georgetown.
Rabun	L. M. Chastain, Tiger.
Randolph	Walter McMichael, Cuthbert.
Richmond	Lawton B. Evans, Augusta.
Rockdale	G. W. Crumbley, Conyers.
Schley	J. T. Stewart, Ellaville.
Screven	H. J. Arnett, Sylvania.
Spalding	W. H. Bolton, jr., Griffin.
Stephens	J. I. Allman, Toccoa.
Stewart	W. T. Halliday, Lumpkin.
Sumter	E. J. McMath, Americus.
Talbot	H. P. Hewitt, Talbotton.
Taliaferro	W. R. Moore, Sharon.
Tattnall	J. O. Bacon, Reidsville.
Taylor	H. P. Wallace, Butler.
Telfair	B. J. Reid, McRae.
Terrell	J. C. Dukes, Dawson.
Thomas	C. H. Rice, Thomasville.
Tift	A. J. Ammons, Tifton.
Toombs	G. C. Brantley, Lyons.
Towns	R. T. Coleman, Hiawassee.
Treutlen	R. E. Ward, Soperton.
Troup	J. B. Strong, Lagrange.
Turner	D. A. Stewart, Ashburn.
Twiggs	A. M. Gates, Jeffersonville.
Union	T. L. Patterson, Blairsville.
Upson	J. A. Thurston, Thomaston.
Walker	R. D. Love, La Fayette.
Walton	J. W. Clegg, Monroe.
Ware	Charles Pittman, Waycross.
Warren	R. V. Swain, Warrenton.
Washington	David Harrison, Sandersville.
Wayne	B. D. Purcell, Jesup.
Webster	J. F. Souter, Preston.
Wheeler	W. G. Hartley, Alamo.
White	T. V. Cantrell, jr., Cleveland.
Whitfield	J. D. Field, Dalton.
Wilcox	J. S. Cook, Pineview.
Wilkes	C. H. Calhoun, Washington.
Wilkinson	Victor Davidson, Irwinton.
Worth	Boyd L. Jones, Sylvester.
IDAHO.	
Ada	Lura V. Paine, Boise.
Adams	Mrs. Orianna M. Hubbard, Council.
Bannock	Nora A. Bayum, Pocatello.
Bear Lake	Seymour Spencer, Paris.
Benewah	Leila Clifford, St. Maries.
Bingham	Mrs. Grace Faulconer, Blackfoot.
Blaine	Beulah Coats, Hailey.
Boise	James V. Ware, Idaho City.
Bonner	Gertrude Le Huquet, Sandpoint.
IDAHO—continued.	
Bonneville	Stella M. Rogers, Idaho Falls.
Boundary	Mrs. Caroline W. Flood, Bonners Ferry.
Butte	Mrs. Louisa Pratt, Arco.
Camas	Pearle H. Lamson, Fairfield.
Canyon	Margaret Knowlton, Caldwell.
Caribou	A. J. Granewald, Soda Springs.
Cassia	Mae Lowe, Burley.
Clark	Mrs. Anna Hales, Dubois.
Clearwater	E. Cecil Parker, Orofino.
Custer	Jennie E. Kelleher, Challis.
Elmore	Blanche Skipper, Mountain Home.
Franklin	John Johnson, Preston.
Fremont	A. C. Lambert, St. Anthony.
Gem	Mrs. J. P. Reed, Emmett.
Gooding	Myrtle Journey, Gooding.
Idaho	Margaret Sweet, Grangeville.
Jefferson	W. S. Burton, Rigby.
Jerome	Mrs. June L. Kearney, Jerome.
Kootenai	R. C. Egbers, Coeur d'Alene.
Latah	Lillian Skattaboe, Moscow.
Lemhi	Mrs. Ethel G. Watkins, Salmon.
Lewis	Norma P. Wilson, Nez Perce.
Lincoln	Mrs. Leah M. Burnside, Shoshone.
Madison	Wm. B. Oldham, Rexburg.
Minidoka	Mrs. Ida E. Sullivan, Rupert.
Nez Perce	Ethel Gilson, Lewiston.
Oneida	James C. Tovey, Malad.
Owyhee	Mrs. Kate G. Boyd, Silver City.
Payette	Anna Pearson, Payette.
Power	Goldie Drake, American Falls.
Shoshone	Mrs. Mary J. Barnes, Wallace.
Teton	Sadie Hulet, Driggs.
Twin Falls	Brittomart Wolfe, Twin Falls.
Valley	Mrs. Tirza J. Wayland, Cascade.
Washington	Olive M. Petrashek, Weiser.
ILLINOIS.	
Adams	John H. Steiner, Quincy.
Alexander	Asa D. Twente, Cairo.
Bond	J. W. Anthony, Greenville.
Boone	Elizabeth B. Harvey, Belvidere.
Brown	Lavina O'Neil, Mount Sterling.
Bureau	G. O. Smith, Princeton.
Calhoun	S. J. Sibley, Hardin.
Carroll	John Hay, Mount Carroll.
Cass	Walter E. Buck, Virginia.
Champaign	Charles H. Watts, Urbana.
Christian	O. P. Simpson, Taylorville.
Clark	Harold Bright, Marshall.
Clay	George W. Brewer, Louisville.
Clinton	Wm. Johnston, Carlyle.
Coles	O. L. Minter, Charleston.
Cook	E. J. Tobin, Chicago (C. H.).
Crawford	O. B. Mount, Robinson.
Cumberland	L. C. Markwell, Toledo.
Dekalb	Warren Hubbard, Sycamore.
Dewitt	Roy H. Johnson, Clinton.
Douglas	E. E. Gere, Tuscola.
Dupage	Charles B. Bowman, Wheaton.
Edgar	O. Rice Jones, Paris.
Edwards	Grant Balding, Albion.
Effingham	J. W. Davis, Effingham.
Fayette	F. E. Crawford, Vandalia.
Ford	H. M. Rudolph, Paxton.
Franklin	H. Clay Ing, Benton.
Fulton	P. H. Hellyer, Lewistown.
Gallatin	J. F. Ashley, Ridgway.
Greene	Rollins L. Scott, Carrollton.
Grundy	E. F. Booth, Morris.
Hamilton	S. O. Dale, McLeansboro.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
ILLINOIS—contd.	
Hancock	S. D. Faris, Carthage.
Hardin	Hattie M. Rittenhouse, Elizabethtown.
Henderson	Allen L. Beall, Oquawka.
Henry	W. F. Huston, Cambridge.
Iroquois	F. A. Gilbreath, Watseka.
Jackson	Otto F. Aken, Murphysboro.
Jasper	J. H. Pursifull, Newton.
Jefferson	William Miner, Mount Vernon.
Jersey	Joseph W. Becker, Jerseyville.
Jo Daviess	B. L. Birkbeck, Galena.
Johnson	E. Wilburn Sutton, Vienna.
Kane	E. M. Harris, Geneva.
Kankakee	Lewis Ogilvie, Kankakee.
Kendall	George Elliot, Yorkville.
Knox	W. F. Boyes, Galesburg.
Lake	T. A. Simpson, Waukegan.
La Salle	W. R. Foster, Ottawa.
Lawrence	Ed. Ashbaugh, Lawrenceville.
Lee	L. W. Miller, Dixon.
Livingston	W. W. McCulloch, Pontiac.
Logan	E. H. Lukenbill, Lincoln.
McDonough	B. E. Decker, Macomb.
McHenry	A. M. Shelton, Crystal Lake.
McLean	B. C. Moore, Bloomington.
Macon	Everett L. Dickey, Decatur.
Macoupin	George W. Solomon, Carlinville.
Madison	H. T. McCrea, Edwardsville.
Marion	Hattie M. Blair, Salem.
Marshall	Willard E. King, Lacon.
Mason	John C. Stoddard, Havana.
Massac	Luther L. Evers, Metropolis.
Menard	William Small, Petersburg.
Mercer	G. E. Platt, Aledo.
Monroe	William C. Heyl, Waterloo.
Montgomery	Everett A. Lewey, Hillsboro.
Morgan	H. H. Vasconcellos, Jacksonville.
Moultrie	Mrs. Lois Coombes, Sullivan.
Ogle	J. E. Cross, Oregon.
Peoria	J. A. Hayes, Peoria.
Perry	R. B. Templeton, Pinckneyville.
Piatt	Chas. McIntosh, Monticello.
Pike	Theo. C. Moore, Pittsfield.
Pope	Mrs. Stella A. Wierwille, Golconda.
Pulaski	May S. Hawkins, Mound City.
Putnam	Anna M. Holliday, Granville.
Randolph	L. W. Von Behren, Chester.
Richland	Earl H. Hostettler, Olney.
Rock Island	Justin Washburn, Rock Island.
Saline	B. D. Gates, Harrisburg.
Sangamon	E. C. Pruitt, Springfield.
Schuyler	Calvin L. Cain, Rushville.
Scott	Olive Wells, Winchester.
Shelby	Charles B. Guin, Shelbyville.
Stark	G. C. Baker, Toulon.
St. Clair	W. A. Hough, Belleville.
Stephenson	George W. Scott, Freeport.
Tazewell	C. I. Martin, Pekin.
Union	Charles O. Otrich, Jonesboro.
Vermilion	Otis P. Haworth, Danville.
Wabash	Elmer Greathouse, Mount Carmel.
Warren	Frank Winbigler, Monmouth.
Washington	T. E. Allen, Nashville.
Wayne	J. B. Galbraith, Fairfield.
White	D. L. Boyd, Carmi.
Whiteside	H. B. Price, Morrison.
Will	August Maue, Joliet.
Williamson	J. W. McKinney, Marion.
Winnebago	Mrs. Abbie Jewett Craig, Rockford.
Woodford	Roy L. Moore, Eureka.
INDIANA.	
Adams	E. S. Christen, Decatur.
Allen	D. O. McComb, Fort Wayne.
Bartholomew	Samuel Sharp, Columbus.
Benton	M. F. O'Rear, Fowler.
Blackford	W. E. Pursley, Hartford City.
Boone	E. M. Servies, Lebanon.
Brown	Grover G. Brown, Nashville.
Carroll	T. W. Armstrong, Delphi.
Cass	J. E. Ludders, Logansport.
Clark	Saml. L. Scott, Jeffersonville.
Clay	Willis E. Akre, Brazil.
Clinton	M. D. Boulden, Frankfort.
Crawford	H. W. Toney, English.
Daviess	J. E. Gilley, Washington.
Dearborn	Geo. C. Cole, Lawrenceburg.
Decatur	James R. Crawley, Greensburg.
Dekalb	F. M. Merica, Auburn.
Delaware	Ernest J. Black, Muncie.
Dubois	Robert E. Eckert, Jasper.
Elkhart	A. E. Weaver, Goshen.
Fayette	Claude Trusler, Connersville.
Floyd	Glenn V. Scott, Georgetown.
Fountain	Guy A. Waldrip, Covington.
Franklin	James A. Fisher, Brookville.
Fulton	Thomas F. Berry, Rochester.
Gibson	Edgar D. Allmon, Princeton.
Grant	Charles H. Terrell, Marion.
Greene	Walter T. Brown, Bloomfield.
Hamilton	Walter Harger, Noblesville.
Hancock	R. R. Roudebush, Greenfield.
Harrison	A. O. Deweese, Corydon.
Hendricks	J. P. Snodgrass, Danville.
Henry	H. B. Roberts, Newcastle.
Howard	Albert F. Hutson, Kokomo.
Huntington	C. Funderburg, Huntington.
Jackson	Harry B. Henderson, Brownstown.
Jasper	Morgan L. Sterrett, Rensselaer.
Jay	W. R. Armstrong, Portland.
Jefferson	W. Guy Pender, Madison.
Jennings	S. E. Whitcomb, Vernon.
Johnson	W. J. Yount, Franklin.
Knox	Jesse Adams, Vincennes.
Kosciusko	Jesse Bruner, Warsaw.
Lagrange	Arthur B. Cookerly, Lagrange.
Lake	F. F. Heighway, Crown Point.
Laporte	Clayton L. Rhoade, Laporte.
Lawrence	Wm. C. Roberts, Bedford.
Madison	J. W. Frazier, Anderson.
Marion	Lee E. Swails, Indianapolis.
Marshall	Floyd M. Annis, Plymouth.
Martin	C. O. Williams, Shoals.
Miami	E. L. Powell, Peru.
Monroe	W. H. Jones, Bloomington.
Montgomery	Karl C. James, Crawfordsville.
Morgan	Lewis Williams, Martinsville.
Newton	W. O. Schanlaub, Kentland.
Noble	Guy R. Hall, Albion.
Ohio	John L. Wessler, Rising Sun.
Orange	Jesse M. Trinkle, Paoli.
Owen	Albert Free, Spencer.
Parke	John H. Jollief, Rockville.
Perry	Lee B. Mullen, Cannelton.
Pike	Howard Brenton, Winslow.
Porter	Fred H. Cole, Valparaiso.
Posey	G. E. Behrens, Mount Vernon.
Pulaski	W. E. Tennell, Winamac.
Putnam	Frank Wallace, Greencastle.
Randolph	O. H. Greist, Winchester.
Ripley	C. R. Hertenstein, Versailles.
Rush	C. M. George, Rushville.
Scott	W. S. Griffith, Scottsburg.
Shelby	W. Everson, Shelbyville.
Spencer	J. W. Strassell, Rockport.
Starke	J. Allen Barr, Knox.
St. Joseph	Ralph Longfield, South Bend.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.
INDIANA—contd.	
Steuben	G. O. Simpson, Angola.
Sullivan	Richard Park, Sullivan.
Switzerland	Ernest Danglade, Vevay.
Tippecanoe	C. V. Peterson, La Fayette.
Tipton	Elmer L. Mitchell, Tipton.
Union	Chas. C. Abernethy, Liberty.
Vanderburg	K. W. Hemmer, Evansville.
Vermilion	J. F. Lewman, Newport.
Vigo	J. M. Propst, Terre Haute.
Wabash	A. B. Oswalt, Wabash.
Warren	Harry Evans, Williamsport.
Warrick	Ivor J. Robinson, Boonville.
Washington	Orra Hopper, Salem.
Wayne	C. O. Williams, Richmond.
Wells	A. R. Huyette, Bluffton.
White	Henry J. Reid, Monticello.
Whitley	A. R. Fleck, Columbia City.
IOWA.	
Adair	Minerva Whittum, Greenfield.
Adams	Anna Lynam, Corning.
Allamakee	W. L. Peck, Waukon.
Appanoose	Janet Wilson, Centerville.
Audubon	Ella M. Stearns, Audubon.
Benton	Emma R. Crossley, Vinton.
Black Hawk	H. C. Moeller, Waterloo.
Boone	Gracia E. Tucker, Boone.
Bremer	Grace Beebe, Waverly.
Buchanan	A. E. Jewett, Independence.
Buena Vista	A. E. Harrison, Storm Lake.
Butler	Hazel Black, Allison.
Calhoun	Jeanette Lewis, Rockwell City.
Carroll	George Galloway, Carroll.
Cass	Jennie M. Ward, Atlantic.
Cedar	Jane McCormick, Tipton.
Cerro Gordo	R. E. Newcomb, Mason City
Cherokee	Margaret Montgomery, Cherokee.
Chickasaw	Alf Vaala, New Hampton.
Clarke	Bessie Hart, Osceola.
Clay	D. M. Odle, Spencer.
Clayton	Carl F. Becker, Elkader.
Clinton	C. E. Cozzens, Clinton.
Crawford	F. N. Olry, Denison.
Dallas	May A. Hills, Adel.
Davis	H. C. Brown, Bloomfield.
Decatur	Kate Hull, Leon.
Delaware	W. A. Ottilie, Manchester.
Des Moines	Vail Cordell, Burlington
Dickinson	F. S. Willey Spirit Lake.
Dubuque	Joseph Flynn, Dubuque.
Emmet	Marie Sorum, Estherville.
Fayette	N. J. Breckner, West Union.
Floyd	Mary D. Korinke, Charles City.
Franklin	Harry J. Henderson, Hampton.
Fremont	Edith Anderson, Sidney.
Greene	Mrs. Hasel Ott, Jefferson.
Grundy	D. R. Earl, Grundy Center.
Guthrie	Mrs. Mary L. Boggs, Guthrie Center
Hamilton	E. F. Snow, Webster City.
Hancock	J. R. Baggs, Garner.
Hardin	Blanche Stoddard, Eldora.
Harrison	Marie Case, Logan.
Henry	Eva Allen, Mount Pleasant.
Howard	Mira B. Buck, Cresco.
Humboldt	Clarence Messer, Humboldt.
Ida	Julia Jacobs, Ida Grove.
Iowa	Ida O'Brien, Marengo.
Jackson	E. R. Stoddard, Maquoketa.
Jasper	Lucy E. Hall, Newton.
Jefferson	June Childester, Fairfield.
Johnson	W. N. Leeper, Iowa City.
Jones	Nellie V. Morey, Anamosa.
Keokuk	Harry S. McVicker, Sigourney.
Kossuth	Wm. Shirley, Algona.
Lee	E. C. Lynn, Donnellson.
IOWA—continued.	
Linn	Lula B. Secrist, Marion.
Louisa	Myrtle Jamison, Wapello.
Lucas	Myrtle A. Dungan, Chariton.
Lyon	E. T. Gilman, Rock Rapids.
Madison	Carrie E. Ludlow, Winterset.
Mahaska	Erma Krout, Oskaloosa.
Marion	Mae Goldizen, Knoxville.
Marshall	C. E. Shutt, Marshalltown.
Mills	Geo. E. Masters, Glenwood.
Mitchell	Blanche M. McLaughlin, Osage.
Monona	Ella M. Gardner, Onawa.
Monroe	Myrta Harlow, Albia.
Montgomery	Elizabeth Hugus, Red Oak.
Muscatine	E. D. Bradley, Muscatine.
O'Brien	J. J. Billingsly, Primghar.
Osceola	Mary E. De Boos, Sibley.
Page	Agnes Samuelson, Clarinda.
Palo Alto	Florence Underwood, Emmetsburg.
Plymouth	Agnes Eyres, Le Mars.
Pocahontas	Mrs. J. H. McMichael, Pocahontas.
Polk	Mrs. A. H. Hoffman, Des Moines.
Pottawattamie	Charlotte Dryden, Council Bluffs.
Poweshiek	Estelle Coon, Brooklyn.
Ringgold	Louise Askren, Mount Ayr.
Sac	P. A. Lauterbach, Sac City.
Scott	Henry E. Ronge, Davenport.
Shelby	Rose M. Parker, Harlan.
Sioux	Charles H. Tye, Orange City.
Story	Maude Wakefield, Nevada.
Tama	Mary A. Richards, Toledo.
Taylor	Allie Nelson, Bedford.
Union	Mrs. Nancy Bell, Creston.
Van Buren	H. B. Carroll, Keosauqua.
Wapello	R. L. Gardner, Ottumwa.
Warren	W. M. McGee, Indianola.
Washington	Kathryn Montgomery, Washington.
Wayne	Ava Amenell, Corydon.
Webster	Anna Johnson, Fort Dodge.
Winnebago	Jessie Parker, Forest City.
Winneshiek	H. E. Miller, Decorah.
Woodbury	J. F. Garnes, Sioux City.
Worth	Nora M. King, Northwood.
Wright	Blanche Bock, Clarion.
KANSAS.	
Allen	Lavonia M. Donica, Iola.
Anderson	Josie Henderson, Garnett.
Atchison	D. Anna Speer, Atchison.
Barber	Lola Lichlyter, Medicine Lodge.
Barton	M. V. Rinker, Great Bend.
Bourbon	May Hare, Fort Scott.
Brown	Alma McAtee, Hiawatha.
Butler	H. I. French, El Dorado.
Chase	Katherine Montgomery, Cottonwood Falls.
Chautauqua	Carrie Bellmon, Sedan.
Cherokee	G. A. Sanders, Columbus.
Cheyenne	Mrs. Edith Voeller, St. Francis.
Clark	Maggie M. Myers, Ashland.
Clay	Mrs. G. F. Borland, Clay Center.
Cloud	Jane Collins, Concordia.
Coffey	Mrs. Allie B. Smith, Burlington.
Comanche	Ethel M. Smith, Coldwater.
Cowley	Arka Shoemaker, Winfield.
Crawford	J. W. Miley, Girard.
Decatur	Anne E. Top, Oberlin.
Dickinson	Mary E. Woolverton, Abilene.
Doniphan	C. R. Hewins, Troy.
Douglas	O. J. Lane, Lawrence.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
KANSAS—contd.	
Edwards	Mary Mullikin, Kinsley.
Elk	H. A. Gilmore, Howard.
Ellis	Louis Christiansen, Hays.
Ellsworth	H. Coover, Ellsworth.
Finney	Emma F. Wilson, Garden City.
Ford	Esther M. Wilkinson, Dodge City.
Franklin	Florence Akin, Ottawa.
Geary	Mrs. Nora R. Clark, Junction City.
Gove	B. B. Bacon, Gove.
Graham	LeRoy Mowry, Hill City.
Grant	E. T. MacArthur, New Ulysses.
Gray	Erna Hildebrand Cimarron.
Greeley	August Halfman, Tribune.
Greenwood	Ralph A. Cannon, Eureka.
Hamilton	Mrs. Lizzie Tapscott, Syracuse.
Harper	Mrs. Lulu Carrithers, Anthony.
Harvey	Mary Morrison, Newton.
Haskell	George B. Levitt, Santa Fe.
Hodgeman	Winifred T. Goller, Jetmore.
Jackson	F. R. Palmer, Holton.
Jefferson	Annie Goddard, Oskaloosa.
Jewell	Lula Coyner, Mankato.
Johnson	Lucile Ewing, Olathe.
Kearny	Mrs. India Simmons, Lakin.
Kingman	Mrs. Maud Branden, Kingman.
Kiowa	H. L. Sieg, Greensburg.
Labette	Mary McDole, Oswego.
Lane	Wm. T. Caldwell, Dighton.
Leavenworth	E. Voorhees, Leavenworth.
Lincoln	G. H. Hower, jr., Lincoln.
Linn	M. Ellen Dingus, Mound City.
Logan	Mrs. Eunice Garrity, Russell Springs.
Lyon	Florence M. Wright, Emporia.
McPherson	Mrs. C. O. Aspegren, McPherson.
Marion	J. A. Ray, Marion.
Marshall	Mrs. Etta B. Beavers, Marysville.
Meade	Ola Granger, Meade.
Miami	Maggie Routt, Paola.
Mitchell	Philip Louthan, Beloit.
Montgomery	Nora Howard, Independence.
Morris	Mrs. Flora E. Davis, Council Grove.
Morton	Mrs. C. C. Wilson, Richfield.
Nemaha	R. G. Mueller, Seneca.
Neosho	J. G. Hemphill, Erie.
Ness	Edna Robinson, Ness City.
Norton	Pearl Wyrill, Norton.
Osage	C. A. Deardorff, Lyndon.
Osborne	Bertha Yoxall, Osborne.
Ottawa	Lilias Mortimer, Minneapolis.
Pawnee	Bertha Pruett, Larned.
Phillips	Olive L. Thomas, Phillipsburg.
Pottawatomie	Mrs. Kate E. Hooven, Westmoreland.
Pratt	L. Grace Heaton, Pratt.
Rawlins	Bert Pinneo, Atwood.
Reno	S. P. Rowland, Hutchinson.
Republic	Mary Jansky, Belleville.
Rice	Bertha McCabe, Lyons.
Riley	Reppie Carey, Manhattan.
Rooks	Emma Bigge, Stockton.
Rush	Mrs. Alta L. Mellick, La Crosse.
Russell	Caleb Bodmer, Russell.
Saline	W. H. Stewart, Salina.
Scott	Leo T. Gibbens, Scott City.
Sedgwick	R. M. Crum, Wichita.
Seward	Emma Thompson, Liberal.
Shawnee	Josiah Jordon, Topeka.
Sheridan	Mrs. M. M. McKinney, Hoxie.
KANSAS—contd.	
Sherman	Grace Demaree, Goodland.
Smith	Wm. McMullen, Smith Center.
Stafford	Anna M. Beck, St. John.
Stanton	Mrs. Luella Tucker, Johnson.
Stevens	C. A. Thompson, Hugoton.
Sumner	John R. Brooks, Wellington.
Thomas	Lulu Holmes, Colby.
Trego	Mrs. Minnie O'Neil, Wakeeney.
Wabaunsee	Annie G. Crouch, Alma.
Wallace	Rose Gilbert, Sharon Springs.
Washington	Luella Hill, Washington.
Wichita	J. A. Bryan, Leoti.
Wilson	Mrs. Fannie Lyon, Fredonia.
Woodson	Elizabeth T. Spencer, Yates Center.
Wyandotte	Olive I. Thompson, Kansas City.
KENTUCKY.	
Adair	Noah Loy, Columbia.
Allen	N. S. Shaw, Scottsville.
Anderson	T. J. Leathers, Lawrenceburg.
Ballard	Pearl Thomas, Wickliffe.
Barren	W. M. Totty, Glasgow.
Bath	R. W. Kincaid, Owingsville
Bell	John Hays, Pineville.
Boone	J. C. Gordon, Burlington.
Bourbon	J. B. Caywood, Paris.
Boyd	B. B. Triplett, Catlettsburg.
Boyle	Oscar B. Fallis, Danville.
Bracken	Nannie Hancock, Brooksville.
Breathitt	Fallen Campbell, Jackson.
Breckinridge	J. Raleigh Meader, Hardinsburg.
Bullitt	Ora L. Roby, Shepherdsville.
Butler	C. E. Gary, Morgantown.
Caldwell	H. W. Nichols, Princeton.
Calloway	R. E. Broach, Murray.
Campbell	J. W. Reiley, Alexandria.
Carlisle	N. J. Parsons, Bardwell.
Carroll	Clay Tharp, Carrollton.
Carter	Lelia B. Wilcox, Grayson.
Casey	E. L. Cundiff, Liberty.
Christian	L. E. Foster, Hopkinsville.
Clark	Nancy Stevenson, Winchester.
Clay	Davis M. Allen, Manchester.
Clinton	J. O. Cole, Albany.
Crittenden	James L. F. Paris, Marion.
Cumberland	Cora S. Payne, Burkesville.
Daviess	John L. Graham, Owensboro.
Edmonson	W. A. Pardue, Brownsville.
Elliott	Wales S. Brown, Sandy Hook.
Estill	E. S. Land, Irvine.
Fayette	Nannie G. Faulconer, Lexington.
Fleming	M. N. Evans, Flemingsburg.
Floyd	H. N. Cooley, Prestonburg.
Franklin	L. D. Stucker, Frankfort.
Fulton	Inez Luten, Hickman.
Gallatin	Rosa B. Wood, Warsaw.
Garrard	Jennie Higgins, Lancaster.
Grant	B. N. Harrison, Williamstown.
Graves	J. E. Coleman, Mayfield.
Grayson	Effie Sadler Basham, Leitchfield.
Green	Myrtle F. Howard, Greensburg.
Greenup	J. Howard Hatfield, Greenup.
Hancock	J. H. Lamb, Hawesville.
Hardin	J. A. Payne, Elizabethtown.
Harlan	A. C. Jones, Harlan.
Harrison	B. F. Kearns, Cynthiana.
Hart	R. E. Jaggers, Munfordville.
Henderson	E. B. Liles, Henderson.
Henry	Hallie Ellis Pope, Newcastle.
Hickman	J. W. Brinkley, Clinton.
Hopkins	L. R. Ray, Madisonville.
Jackson	H. F. Minter, McKee.
Jefferson	Orville J. Stivers, Louisville.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.	County.	County superintendent.
KENTUCKY—con.		KENTUCKY—con.	
Jessamine	C. C. Sandusky, Nicholasville.	Morgan	Bernard E. Whitt, West Liberty.
Johnson	Fred Meade, Paintsville.	Muhlenberg	V. M. Moseley, Greenville.
Kenton	J. C. Mills, Erlanger.	Nelson	W. T. McClain, Bardstown.
Knott	Adam Campbell, Hindman.	Nicholas	Eda S. Taylor, Carlisle.
Knox	E. B. Hemphill, Barbourville.	Ohio	E. S. Howard, Hartford.
Larue	Sara Castleman McConnell, Hodgenville.	Oldham	J. W. Selph, La Grange.
Laurel	D. B. Johnson, London.	Owen	Mrs. Clara A. Jones, Owenton.
Lawrence	J. H. Ekers, Louisa.	Owsley	A. J. Creech, Booneville.
Lee	J. P. Thomas, Beattyville.	Pendleton	John E. Drake, Falmouth.
Leslie	Mary Hoskins, Feltner.	Perry	M. C. Napier, Hazard.
Letcher	E. B. Hale, Whitesburg.	Pike	Fonso Wright, Pikeville.
Lewis	J. Q. Adams, Vanceburg.	Powell	Dudley Caudell, Stanton.
Lincoln	Garland Singleton, Stanford.	Pulaski	Leonard E. Meece, Somerset.
Livingston	H. D. Millen, Smithland.	Robertson	Cleveland Moore, Mount Olivet.
Logan	R. N. Beauchamp, Russellville.	Rockcastle	Alice Davis, Mount Vernon.
Lyon	N. G. Martin, Eddyville.	Rowan	J. H. Powers, Morehead.
Madison	Ben F. Edwards, Richmond.	Russell	B. A. Lawless, Jamestown.
Magoffin	J. S. Adams, Salyersville.	Scott	Mary Bradley, Georgetown.
Marion	J. W. Clarkson, Lebanon.	Shelby	Mrs. M. L. Hall, Shelbyville.
Marshall	Harry W. Peters, Benton.	Simpson	Alice Adams, Franklin.
Martin	U. G. Johnson, Inez.	Spencer	Katie B. Beauchamp, Taylorsville.
Mason	G. H. Turnipseed, Maysville.	Taylor	Geo. E. Sapp, Campbellsville.
McCracken	M. V. Miller, Paducah.	Todd	H. G. Watson, Elkton.
McCreary	J. L. Harmon, Whitley City.	Trigg	Levi Cunningham, Cadiz.
McLean	Wallace T. Bennett, Calhoun.	Trimble	Carrie Logan Hood, Bedford.
Meade	L. H. Powell, Brandenburg.	Union	G. W. Curry, Morganfield.
Menifee	W. O. Back, Frenchburg.	Warren	Eugenia Mills, Bowling Green.
Mercer	Ora L. Adams, Harrodsburg.	Washington	Simpson Roberts, Springfield.
Metcalfe	R. A. Palmore, Edmonton.	Wayne	Hattie Denney, Monticello.
Monroe	Mrs. Ella Braswell, Tompkinsville.	Webster	Thos. W. Johnson, Dixon.
Montgomery	Georgia V. Sledd, Mount Sterling.	Whitley	Samuel E. Walker, Williamsburg.
		Wolfe	Taylor Shockey, Campton.
		Woodford	M. B. Hifner, Versailles.

Parish.	Parish superintendent.	Parish.	Parish superintendent.
LOUISIANA.		LOUISIANA—con.	
Acadia	J. M. Baker, Crowley.	Madison	J. R. Linton, Tallulah.
Allen	R. G. Corkern, Oberlin.	Morehouse	S. A. Caldwell, Bastrop.
Ascension	H. P. Broussard, Donaldsonville.	Natchitoches	L. E. Hudson, Natchitoches.
Assumption	S. A. Alleman, Napoleonville	Orleans	J. M. Gwinn, New Orleans.
Avoyelles	J. M. Barham, Marksville.	Ouachita	T. O. Brown, Monroe.
Beauregard	L. D. McCollister, De Ridder.	Plaquemines	A. L. Pourciau, Pointe a la Hache.
Bienville	E. H. Fisher, Arcadia.	Pointe Coupee	Alonzo McFarland, New Roads.
Bossier	W. A. Fortson, Benton.	Rapides	W. J. Avery, Alexandria.
Caddo	C. E. Byrd, Shreveport.	Red River	A. H. Horton, Coushatta.
Calcasieu	F. K. White, Lake Charles.	Richland	E. E. Keebler, Rayville.
Caldwell	E. B. Cottingham, Columbia.	Sabine	W. S. Mitchell, Many.
Cameron	T. W. McCall, Grand Chenier.	St. Bernard	Clement Story, St. Bernard.
Catahoula	H. W. Wright, Jonesville.	St. Charles	J. B. Martin, Hahnville.
Claiborne	J. H. Davidson, Homer.	St. Helena	W. E. Phillips, Greensburg.
Concordia	D. C. Strickler, Vidalia.	St. James	J. N. Gourdain, Convent.
De Soto	G. O. Houston, Mansfield.	St. John the Baptist	L. F. Laurent, Edgard.
East Baton Rouge	W. B. Hatcher, Baton Rouge.	St. Landry	W. B. Prescott, Opelousas.
East Carroll	Ashley Warlick, Lake Providence.	St. Martin	W. C. Perrault, St. Martinville.
East Feliciana	D. G. Lunsford, Clinton.	St. Mary	L. A. Law, Franklin.
Evangeline	E. E. Ortego, Ville Platte.	St. Tammany	E. E. Lyon, Covington.
Franklin	J. L. McDuff, Winnsboro.	Tangipahoa	W. A. Sisemore, Amite.
Grant	J. N. Warner, Colfax.	Tensas	T. M. Wade, St. Joseph.
Iberia	L. G. Porter, New Iberia.	Terrebonne	H. L. Bourgeois, Houma.
Iberville	L. E. Messick, Plaquemine.	Union	W. W. Bennett, Farmerville.
Jackson	H. L. Nobles, Jonesboro.	Vermilion	J. H. Williams, Abbeville.
Jefferson	J. C. Ellis, Gretna.	Vernon	Finly Stanly, Leesville.
Jefferson Davis	W. P. Arnette, Jennings.	Washington	D. H. Stringfield, Franklinton.
Lafayette	A. W. Bittle, Lafayette.	Webster	T. W. Fuller, Minden.
Lafourche	W. S. Lafargue, Thibodaux.	West Baton Rouge	J. H. Bres, Port Allen.
La Salle	W. T. Hodges, Jena.	West Carroll	W. S. Campbell, Oak Grove.
Lincoln	H. L. Campbell, Ruston.	West Feliciana	P. C. Garris, St. Francisville.
Livingston	E. S. Easterly, Denham Springs.	Winn	A. L. Allen, Winnfield.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

Towns in union.	Union superintendent.
MAINE.	
Abbot, Blanchard, Elliottsville Pl., Kingsbury, Pl., Monson, Willimantic.	Claude L. Sidelinger, Monson.
Acton, Lebanon, Newfield, Shapleigh.	George M. D. Grant, East Lebanon.
Addison, Centerville, Jonesboro, Jonesport.	Ralph W. Brown, Jonesport.
Albany, Lovell, Stoneham, Sweden.	W. H. Edminster, South Stoneham.
Albion, Burnham, Troy, Unity, Unity Pl.	Mrs. Naomi T. Gregoire, Unity.
Alexander, Crawford, Grand Lake Str. Pl., No. 21 Pl. (Wash.), Princeton, Talmadge, Waite, Codyville Pl., Topsfield.	Charles H. Swan, Princeton.
Alfred, Limerick, Lyman, Waterboro.	Florent Whitmore, Alfred.
Allagash Pl., Fort Kent, St. Francis Pl., St. John Pl.	Catherine Onellette, Fort Kent.
Alna, Dresden, Edgecomb, Pittston, Wiscasset.	Leslie A. Bailey, Dresden.
Alton, Argyle, Lagrange, Medford, Orneville.	Mrs. Lucy P. Leach, Lagrange.
Amherst, Aurora, Clifton, Mariaville, No. 21 Pl., No. 33 Pl., Otis, Waltham.	Mrs. Carolyn Orcutt, Amherst.
Amity, Cary Pl., Hodgdon, Linneus, New Limerick.	W. E. Finch, Hodgdon.
Andover, Byran, Mexico, Roxbury.	John J. Howard, Ridlonville.
Anson, Bingham, Embden, Solon.	Mrs. L. A. Bradbury, North Anson.
Appleton, Liberty, Palermo, Washington.	Albert F. Barnes, Liberty.
Arrowsic, Georgetown, Phippsburg, Westport, Woolwich.	Mrs. Clara M. Reed, Woolwich.
Ashland, Garfield Pl., Masardis, Nashville Pl., Oxbow Pl., Portage Lake.	W. G. Hoyt, Ashland.
Athens, Brighton Pl., Cambridge, Cornville, Harmony.	E. A. Pattee, Harmony.
Atkinson, Bradford, Charleston, Corinth, Kenduskeag.	H. D. Ridlon, Charleston.
Avon, Freeman, Phillips, Salem, Strong.	Stephen T. Marshall, Phillips.
Baileyville, Baring, Calais.	W. H. Phinney, Calais.
Baldwin, Hiram, Sebago.	Mrs. Celia H. Sanborn, East Hiram.
MAINE—contd.	
Bancroft, Drew Pl., Glenwood Pl., Haynesville, Kingman, Macwahoc Pl., Reed Pl.	H. E. Henry, Wytopitlock.
Bar Harbor, Trenton.	Frank McGouldrick, Bar Harbor.
Barnard Pl., Brownville, Lake View Pl., Milo, Williamsburg.	A. L. Shorey, Milo.
Bath, West Bath.	C. L. Smith, Bath.
Beddington, Cherryfield, Columbia Falls, Deblois, Steuben.	Mrs. Frances C. Jewett, Cherryfield.
Belfast, Searsport.	E. E. Roderick, Belfast.
Belgrade, Fayette, Mount Vernon, Readfield.	Ralph G. Oakes, Readfield.
Belmont, Lincolnville, Morrill, Northport, Searsmont.	Mrs. Lena Rankin, Lincolnville.
Benedicta, Hersey, Mount Chase, Patten, Stacyville Pl.	A. L. Todd, Patten.
Benton, Fairfield.	M. C. Joy, Fairfield.
Berwick, Eliot, South Berwick.	W. C. McCue, Berwick.
Bethel, Gilead, Greenwood, Mason.	F. E. Russell, Bethel.
Bigelow Pl., Coplin Pl., Dead River Pl., Eustis, Flagstaff Pl., Lang Pl.	W. C. Webster, Flagstaff.
Blaine, Bridgewater, E. Plantation, Mars Hill, Monticello.	F. L. Higgins, Mars Hill.
Bluehill, Brooklin, Sedgwick.	E. L. Linscott, Bluehill.
Boothbay, Boothbay Harbor, Monhegan Pl., Southport.	Elmer C. Vining, Boothbay Harbor.
Bowdoin, Bowdoinham, Richmond.	Chas. A. Snow, Richmond.
Bowerbank, Dover, Foxcroft, Sebec.	Wm. M. Bottomley, Foxcroft.
Bradley, Greenbush, Greenfield, Milford, Passadumkeag.	Mrs. Gertrude E. Gifford, Olamon.
Bremen, Jefferson, Nobleboro, Waldoboro.	Y. V. Thompson, Waldoboro.
Brewer, Eddington, Holden, Veazie.	F. W. Burrill, Brewer.
Bridgton, Harrison, Naples.	Guy Monk, Bridgton.
Bristol, Damariscotta, Newcastle, South Bristol.	Julia E. Barker, Damariscotta.
Brooks, Jackson, Monroe, Swanville, Waldo.	Ernest L. Toner, Brooks.
Brooksville, Castine, Islesboro, Penobscot.	D. W. Rollins, Castine.

XI.—County and Other Local Superintendents of Schools—Continued.

Towns in union.	Union superintendent.
MAINE—contd.	
Brookton, Danforth, Forest City, Orient, Vanceboro, Weston.	J. F. Philbrook, Danforth.
Brownfield, Denmark, Fryeburg, Stow.	C. L. Clement, Fryeburg.
Brunswick, Topsham.	John A. Cone, Brunswick.
Buckfield, Hartford, Hebron, Sumner.	Leon E. Cash, Buckfield.
Bucksport, Orland, Orrington, Verona.	Abbie M. Buck, Orland.
Burlington, Edinburg, Enfield, Grand Falls Pl., Howland, Lowell, Maxfield, Sebœis Pl.	Harold Dempsey, Enfield.
Buxton, Hollis, Standish.	Geo. E. Jack, Hollis Center.
Camden, Hope, Thomaston.	J. L. Dyer, Camden.
Canaan, Clinton, Pittsfield.	T. W. McQuaide, Pittsfield.
Canton, Livermore	T. A. De Costa, Canton.
Cape Elizabeth, South Portland.	Simon M. Hamlin, South Portland.
Caratunk Pl., Concord, Mayfield Pl., Moscow, Pleasant Ridge Pl., The Forks Pl., West Forks Pl.	Charles E. Ball, Bingham.
Caribou, Limestone.	C. A. Grant, Caribou.
Carmel, Dixmont, Etna, Newberg.	E. E. Harris, Carmel.
Carroll, Lakeville Pl., Lee, Prentiss, Springfield, Webster Pl.	H. E. Fortier, Springfield.
Carthage, Dixfield, Peru, Weld.	H. W. Coburn, Dixfield.
Casco, Otisfield, Raymond.	Howard Gilpatrick, Casco.
Castle Hill, Chapman, Mapleton.	Elmer H. Webber, Mapleton.
Caswell Pl., Connor, Cyr Pl., Hamlin Pl., Van Buren.	Charles L. O'Connell, Van Buren.
Charlotte, Cooper, Dennysville, Edmunds, Marion, Meddybemps, No. 14 Pl., Pembroke.	J. B. Thompson, West Pembroke.
Chelsea, Somerville, Whitefield, Windsor.	Lila M. Northrup, Coopers Mills.
Chester, Lincoln, Mattawamkeag, Winn, Woodville.	S. M. Nieveen, Mattawamkeag.
Chesterville, Industry, New Sharon, Vienna.	Everett Peacock, New Sharon.
China, Vassalboro, Winslow.	George E. Paine, North Vassalboro.
Columbia, Harrington, Milbridge.	Ray Robinson, Harrington.
Corinna, Detroit, Newport, Plymouth.	Clifton E. Wass, Newport.
Cornish, Limington, Parsonsfield, Porter.	I. J. Merry, Cornish.
Cranberry Isles, Mount Desert, Southwest Harbor, Tremont.	W. E. Clark, Southwest Harbor.
Criehaven Pl., Matinicus Isle Pl., Union, Warren.	F. D. Rowe, Warren.
Crystal, Island Falls, Sherman, Silver Ridge Pl.	George C. Hight. Island Falls.
Cumberland, Falmouth, North Yarmouth.	D. W. Lunt, Portland, R. 4.
Cushing, Friendship, St. George, South Thomaston.	Edw. M. Tucker, Tenants Harbor.
Cutler Lubec, Trescott, Whiting.	John Paton, Lubec.
Dallas Pl., Madrid, Rangeley, Rangeley Pl., Sandy River Pl.	J. M. Pike, Rangeley.
Dayton, North Kennebunkport, Saco.	T. T. Young, Saco..
Dedham, Ellsworth, Surry.	R. E. Stevens, Ellsworth.
Deer Isle, Isle au Haut, Stonington.	C. E. Lord, Deer Isle.
Dennistown Pl., Greenville, Jackman Pl., Long Pond Pl., Moose River Pl., Shirley.	Russell S. Taylor, Greenville.
Dexter, Garland, Ripley.	Jas. A. Hamlin, Dexter.
Durham, Lisbon, Webster.	A. R. Carter. Lisbon Falls.
Dyer Brook, Ludlow, Merrill, Moro Pl., Oakfield, Smyrna.	W. E. Lane, Smyrna Mills.
Eagle Lake, New Canada Pl., Wallagrass Pl., Winterville.	Thos. J. Fournier, Eagle Lake.
Eastbrook, Franklin, Hancock, Lamoine.	S. S. Scammon, Franklin.
East Livermore, Wayne.	F. R. Bowdoin, Livermore Falls.
East Machias, Machias, Machiasport, Marshfield, Northfield, Roque Bluffs, Whitneyville.	R. L. Sinclair, Machias.
East Millinocket, Medway, Millinocket.	W. M. Marr, Millinocket.
Easton, Fort Fairfield.	C. E. Glover, Fort Fairfield.
Eastport, Perry, Robbinston.	W. H. Sturtevant, Eastport.
Exeter, Glenburn, Hudson, Levant, Stetson.	Eri Worcester. Kenduskeag.
Farmingdale, Gardiner, Randolph.	L. A. Ross, Gardiner.
Farmington, New Vineyard, Temple.	Wm. B. Woodbury, Farmington.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

Towns in union.	Union superintendent.	Towns in union.	Union superintendent.
MAINE—contd.		MAINE—contd.	
Frankfort, Prospect, Stockton Springs, Winterport.	Frederick Nickerson, Monroe.	Jay, Wilton	H. R. Houston, North Jay.
Freedom, Knox, Montville, Thorndike.	Mrs. P. W. Berry, Brooks.	Kennebunk, Kennebunkport.	M. T. Goodrich, Kennebunk.
Freeport, Pownal, Yarmouth.	Frank H. Byram, Yarmouthville.	Lincoln Pl., Magalloway Pl., Newry, Upton.	Charles S. Hulbert, Upton.
Frenchville, Grand Isle, Madawaska, St. Agatha.	B. S. Dufour, St. Agatha.	Litchfield, Monmouth, Wales, West Gardiner.	Mrs. Harriet Fenderson, Monmouth.
Gouldsboro, Sorrento, Sullivan, Winter Harbor.	Elmer B. Eddy, West Gouldsboro.	Long Island Pl., North Haven, Swans Island, Vinalhaven.	Edward A. Smalley, Vinalhaven.
Gray, New Gloucester, Windham.	C. E. Varney, Gray.	Mechanic Falls, Minot, Poland.	Mrs. Harriet M. Spiller, Mechanic Falls.
Greene, Leeds, Turner.	R. W. Blaisdell, Turner Center.	Mercer, Norridgewock, Smithfield, Starks.	Ed. A. Simoneau, Norridgewock.
Guilford, Parkman, Sangerville, Wellington.	Walter J. Rideout, Guilford.	New Sweden, Stockholm, Westmanland Pl., Woodland.	Elfrida Nielander, Caribou, R. F. D. No. 4.
Hallowell, Manchester, Winthrop.	W. F. Packard, Winthrop.	North Berwick, Wells.	C. A. Rush, North Berwick.
Hammond Pl., Houlton, Littleton.	T. P. Packard, Houlton.	Norway, Oxford, Waterford.	W. E. Stuart, Norway.
Hampden, Hermon.	S. B. Knight, Hampden.	Oakland, Rome, Sidney.	John S. Tapley, Oakland.
Hanover, Milton Pl., Rumford.	L. E. Williams, Rumford.	Old Orchard, Scarboro.	F. H. B. Heald, South Portland, R. 6.
Hartland, Palmyra, St. Albans.	H. B. Clifford, Hartland.	Paris, Woodstock	A. B. Garcelon, South Paris.
Highland Pl., Kingfield, Lexington Pl., New Portland.	C. J. Dunlap, Kingfield.	Perham, Wade, Washburn.	O. E. Young, Washburn.
		Presque Isle, Westfield.	S. E. Preble, Presque Isle.
		Rockland, Rockport.	Harry C. Hull, Rockland.

County.	County superintendent.	County.	County superintendent.
MARYLAND.		MARYLAND—contd.	
Allegany	Edward F. Webb, Cumberland.	Howard	W. C. Phillips, Ellicott City.
Anne Arundel	George Fox, Annapolis.	Kent	Edward J. Clarke, Chestertown.
Baltimore	....	Montgomery	Edwin W. Broome, Rockville.
Calvert	Nicholas Willis, Prince Frederick.	Prince Georges	E. S. Burroughs, Upper Marlboro.
Caroline	E. M. Noble, Denton.	Queen Annes	T. G. Bennett, Centerville.
Carroll	M. S. H. Unger, Westminster.	St. Marys	G. W. Joy, Leonardtown.
Cecil	Hugh W. Caldwell, Elkton.	Somerset	Wm. H. Dashiell, Princess Anne.
Charles	F. Bernard Gwynn, La Plata.	Talbot	Nicholas Orem, Easton.
Dorchester	J. B. Noble, Cambridge.	Washington	B. J. Grimes, Hagerstown.
Frederick	G. Lloyd Palmer, Frederick.	Wicomico	James M. Bennett, Salisbury.
Garrett	F. E. Rathbun, Oakland.	Worcester	E. W. McMaster, Snow Hill.
Harford	C. M. Wright, Bel Air.		

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

Towns in union.	Union superintendent.
MASSACHUSETTS.[3]	
Acton, Carlisle, Littleton, Westford.	Herman C. Knight, Littleton.
Acushnet, Fairhaven, Marion, Mattapoisett.	Charles F. Prior, Fairhaven.
Agawam, Ludlow.	Walter E. Gushee, Ludlow.
Alford, Egremont, Richmond, West Stockbridge.	Theodore F. Cooke, R. F. D. 1, Pittsfield.
Amherst, Pelham.	Jason O. Cook, Amherst.
Ashburnham, Winchendon.	Austin R. Paull, Winchendon.
Ashby, Lunenburg, Townsend.	John Bacon, Townsend.
Ashfield, Cummington, Goshen, Plainfield.	Charles W. Walker, Ashfield.
Ashland, Hopkinton.	Warren B. Lyman, Hopkinton.
Auburn, Sutton.	Henry H. Pratt, 1232 Main Street, Worcester.
Avon, Holbrook, Randolph.	James J. Quinn, jr., Holbrook.
Ayer, Boylston, Shirley, West Boylston.	Frank C. Johnson, Ayer.
Barre, Hardwick, Petersham.	Albert S. Cole, Barre.
Becket, Chester, Middlefield.	William H. Sanderson, Chester.
Bedford, Stoneham.	Arthur B. Webber, Stoneham.
Belchertown, Enfield.	Alvin R. Lewis, Belchertown.
Bellingham, Hopedale, Mendon.	Carroll H. Drown, Hopedale.
Berkley, Dighton, Rehoboth.	Mortimer H. Bowman, Dighton.
Berlin, Northboro, Shrewsbury, Southboro.	Frederick B. Van Ornum, Northboro.
Bernardston, Gill, Leyden, Northfield, Warwick.	Elmer F. Howard, East Northfield.
Billerica, Burlington.	Eugence C. Vining, Billerica.
Blackstone, Millville, Seekonk.	Chas. W. Walter, Y. M. C. A., Woonsocket, R. I.
Blandford, Huntington, Montgomery, Russell.	Melvin J. West, Huntington.
Bolton, Dunstable, Harvard, Pepperell.	George B. Clarke, Pepperell.
Bourne, Mashpee, Sandwich.	Herbert L. Whitman, Buzzards Bay.
Boxborough, Maynard, Stow.	W. H. Millington, Maynard.
Brewster, Dennis, Yarmouth.	Alberto W. Small, Yarmouth.
Brimfield, Monson	Francis S. Brick, Monson.
Brookfield, North Brookfield.	James S. Hayes, North Brookfield.
Buckland, Colrain, Shelburne.	C. J. Richards, Shelburne Falls.
Carver, Lakeville, Rochester.	Wm. J. B. MacDougall, Middleboro.
Charlemont, Hawley, Heath, Rowe.	Frank P. Davison, Charlemont.
Charlton, Leicester.	Theodore W. King, Leicester.
Chatham, Eastham, Harwich, Orleans.	Loring G. Williams, Harwich.
MASSACHUSETTS—continued.	
Cheshire, Hancock, Lanesboro, New Ashford.	Everett G. Loring, Lanesboro.
Chesterfield, Williamsburg, Worthington.	Lucius A. Merritt, ——.
Chilmark, Edgartown, Gay Head, Oak Bluffs, Tisbury, West Tisbury.	Robert W. Martin, Vineyard Haven.
Clarksburg, Florida, Monroe, Savoy.	D. F. Carpenter, 32 Meadow Street, North Adams.
Conway, Deerfield, Sunderland, Whateley.	Andrew S. Thomson, South Deerfield.
Dana, Greenwich, New Salem, Prescott.	Arthur W. Smith, North Dana.
Douglas, Uxbridge.	C. L. Judkins, Uxbridge.
Dover, Sudbury, Wayland.	Frank H. Benedict, Cochituate.
Dracut, North Reading, Tewksbury, Tyngsborough.	Charles L. Randall, 97 Eighteenth Street, Lowell.
Dudley, Webster.	William F. Sims, Webster.
Duxbury, Marshfield, Scituate.	Frederick E. Bragdon, Egypt.
East Bridgewater.	Edgar H. Grout, East Bridgewater.
Easthampton, Southhampton, Westhampton.	William D. Miller, Easthampton.
East Longmeadow, Hampden, Longmeadow, Wilbraham.	Frederic A. Wheeler, East Longmeadow.
Erving, Leverett, Shutesbury, Wendell.	Mrs. Cora A. Stearns, Millers Falls.
Essex, Hamilton, Lynnfield, Topsfield, Wenham.	Harvey R. Williams, Wenham.
Foxboro, Norton, Plainville.	Ira A. Jenkins, Foxboro.
Franklin, Wrentham.	Arthur W. Hale, Franklin.
Freetown, Gosnold, Westport.	Edward L. Hill, Assonet.
Georgetown, Groveland, Rowley.	Geo. E. Caswell, Georgetown.
Grafton, Upton.	George A. Coe, Grafton.
Granby, South Hadley.	Frederick E. Whittemore, South Hadley Falls.
Granville, Sandisfield, Southwick, Tolland.	Wm. H. Sanderson, Granville.
Hadley, Hatfield.	Norman J. Bond, 49 Dryads Green, Northampton.
Halifax, Kingston, Pembroke, Plympton.	Howard W. Dunn, jr., Kingston.
Hanover, Hanson, Norwell.	Stephen G. Bean, West Hanover.
Hinsdale, Peru, Washington, Windsor.	David J. Malcolm, Hinsdale.
Holden, Oakham, Paxton, Rutland.	James R. Childs, Holden.
Holland, Wales, Warren.	Hermann G. Patt, Warren.

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[3] Practically all city superintendents have supervision over some rural schools. See also p. 71.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

Towns in union.	Union superintendent.
MASSACHUSETTS—continued.	
Holliston, Medway, Sherborn.	C. Edward Fisher, Holliston.
Hubbardston, Phillipston, Royalston, Templeton.	Asa M. Jones, Baldwinsville.
Lee, Monterey, Otis, Tyringham.	Clarence E. Michels, Lee.
Medfield, Millis, Norfolk, Westwood.	A. S. Ames, Medfield.
Merrimac, Newbury, Salisbury, West Newbury.	Herman N. Knox, 226 High Street, Newburyport.
Millbury, Oxford	Chauncey C. Ferguson, Millbury.
Mount Washington, New Marlboro, Sheffield.	Alfred O. Tower, Sheffield.
New Braintree, Sturbridge, West Brookfield.	Charles C. Richardson, West Brookfield.
Princeton, Sterling, Westminster.	Guy H. Vail.
Provincetown, Truro, Wellfleet.	C. M. Pennell, Provincetown.
Raynham, West Bridgewater.	Thomas E. Gay, West Bridgewater.
Somerset, Swansea	Oliver H. Toothaker, Swansea.
Wilmington, Boxford, Middleton.	Roscoe G. Frame, Wilmington.

County.	County commissioner.
MICHIGAN.	
Alcona	George R. Emerick, Harrisville.
Alger	Earle H. Sortore, Munising.
Allegan	Mrs. C. L. Goodrich, Allegan.
Alpena	Oscar J. Carr, Alpena.
Antrim	Kate A. Wilson, Bellaire.
Arenac	Lena Herman, Standish.
Baraga	Elna E. Nelson, Baraga.
Barry	Gertrude R. Miller, Hastings.
Bay	J. B. Laing, Bay City.
Benzie	Jay S. Pettitt, Benzonia.
Berrien	Mrs. E. H. Cole, St. Joseph.
Branch	L. L. Livermore, Coldwater.
Calhoun	D. A. Davis, Marshall.
Cass	Geneva M. Ratliff, Dowagiac.
Charlevoix	May L. Stewart, East Jordan.
Cheboygan	Arthur L. Martin, Cheboygan.
Chippewa	T. B. Aldrich, Sault Ste. Marie.
Clare	Geo. E. Bersotte, Harrison.
Clinton	Mattie Smith, St. Johns.
Crawford	Marguerite Hoyt, Grayling.
Delta	C. U. Woolpert, Escanaba.
Dickinson	D. O'Hara, Iron Mountain.
Eaton	Cynthia A. Green, Charlotte.
Emmet	Anson H. Washburn, Petoskey.
Genessee	John L. Riegle, Flint.
Gladwin	Susie F. Booth, Gladwin.
Gogebic	Laura Bowden, Ironwood.
Grand Traverse	Lee Hornsby, Traverse City.
Gratiot	H. A. Potter, Ithaca.
Hillsdale	Robert C. Young, Hillsdale.
Houghton	J. Bettens, Houghton.
Huron	W. H. Sparling, Bad Axe.
Ingham	Daisy I. Call, Mason.
Ionia	J. Calvin Linebaugh, Ionia.
Iosco	Ina M. Bradley, Tawas City.
Iron	John F. Mason, Crystal Falls.
Isabella	Frank E. Morrison, Mount Pleasant.
Jackson	W. W. McLain, Jackson.
Kalamazoo	Mary Ensfield, Kalamazoo.
Kalkaska	Irene Louise Getty, Kalkaska.
Kent	A. M. Freeland, Grand Rapids.
Keweenaw	H. S. Winter, Mohawk.
MICHIGAN—contd.	
Lake	Edwin G. Johnson, Luther.
Lapeer	C. H. Naylor, Lapeer.
Leelanau	H. R. Dumbrille, Glen Arbor.
Lenawee	G. J. Tripp, Adrian.
Livingston	H. G. Aldrich, Fowlerville.
Luce	Mrs. Ann I. Auten, Newberry.
Mackinac	James E. Quinlan, St. Ignace.
Macomb	Will L. Lee, Mount Clemens.
Manistee	Elbert Gorred, Manistee.
Marquette	S. R. Anderson, Marquette.
Mason	C. A. Rinehart, Scottville.
Mecosta	C. G. Card, Big Rapids.
Menominee	James A. Muma, Menominee.
Midland	B. G. Scollay, Midland.
Missaukee	Lydia Ripatte, Lake City.
Monroe	John G. Schafer, Monroe.
Montcalm	E. Straight, Stanton.
Montmorency	David W. Farrier, Hillman.
Muskegon	Mrs. Nellie B. Chisholm, Muskegon.
Newaygo	Carrie L. Carter, Fremont.
Oakland	A. L. Craft, Pontiac.
Oceana	Angeline London, Hart.
Ogemaw	Josephine Woods, West Branch.
Ontonagon	A. C. Adair, Rockland.
Osceola	Otto J. Heber, Reed City.
Oscoda	Georgia L. Fowler, Mio.
Otsego	R. F. Jennings, Gaylord.
Ottawa	N. R. Stanton, Holland.
Presque Isle	Martha A. Caldwell, Onaway.
Roscommon	W. M. Coon, Roscommon.
Saginaw	Mrs. Evangeline G. Tefft, Saginaw, W. S.
St. Clair	E. T. Blackney, Port Huron.
St. Joseph	Lewis Miller, Centerville.
Sanilac	W. J. Musselman, Sandusky.
Schoolcraft	W. T. B. Cornell, Manistique.
Shiawassee	H. E. Slocum, Corunna.
Tuscola	B. H. McComb, Caro.
Van Buren	E. V. Root, Paw Paw.
Washtenaw	Evan Essery, Ann Arbor.
Wayne	E. W. Yost, Detroit.
Wexford	Roy Noteware, Cadillac.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
MINNESOTA.	
Aitkin	Iva Poston, Aitkin.
Anoka	Mrs. C. Lenfest, Anoka.
Becker	Anna G. Rogstad, Detroit.
Beltrami	J. C. McGhee, Bemidji.
Benton	Agnes K. Burns, Foley.
Bigstone	Martha Rothwell, Ortonville.
Blue Earth	W. H. Detamore, Mankato.
Brown	Robt. B. Kennedy, New Ulm.
Carlton	Nora A. Nilsen, Moose Lake.
Carver	F. L. Williams, Watertown.
Cass	R. F. Ross, Walker.
Chippewa	Oline Rolighed, Montevideo.
Chisago	E. J. Cederholm, Lindstrom.
Clay	S. O. Tang, Moorhead.
Clearwater	Mrs. Mae Barragy Barsness, Bagley.
Cook	Wm. J. Clinch, Grand Marais.
Cottonwood	Ernest Turner, Windom.
Crow Wing	Irma C. Hartley, Brainerd.
Dakota	Josephine Raetz, Hastings.
Dodge	Zena Cooper, Mantorville.
Douglas	Eva E. Wold, Alexandria.
Faribault	Eva Jones, Blue Earth.
Fillmore	Cora Bigelow, Preston.
Freeborn	Harold Dahlen, Albert Lea.
Goodhue	E. B. Bergquist, Red Wing.
Grant	Blanche L. Bremmin, Elbow Lake.
Hennepin	Mrs. May H. Dills, Minneapolis.
Houston	Mary Welda, Caledonia.
Hubbard	D. R. Bradford, Park Rapids.
Isanti	Mrs. M. B. Hixson, Cambridge.
Itasca	Jessie E. Hutchins, Grand Rapids.
Jackson	Nellie R. Rouse, Jackson.
Kanabec	Willis Fairbanks, Mora.
Kandiyohi	O. O. Ulvin, Willmar.
Kittson	Hans Hanson, Hallock.
Koochiching	G. A. Olson, International Falls.
Lac qui Parle	Mrs. Hilda Slind, Madison.
Lake	Mrs. Alice W. Lawrence, Two Harbors.
Lesueur	J. A. Meagher, Lesueur Center.
Lincoln	J. T. Clawson, Ivanhoe.
Lyon	Mrs. Adelaide Whiting Anderson, Marshall.
McLeod	Louise G. Karstens, Glencoe.
Mahnomen	Alice E. Carl, Mahnomen.
Marshall	David Johnson, Warren.
Martin	Minnie Follett, Fairmont.
Meeker	Martha Minor, Litchfield.
Millelacs	Olaf Wasenius, Princeton.
Morrison	Eliza A. Batzer, Little Falls.
Mower	Mrs. Eunice L. Rice, Austin.
Murray	Jeannie Holm, Slayton.
Nicollet	Albert J. Holmstead, St. Peter.
Nobles	John P. Hoffman, Worthington.
Norman	Agnes Brohaugh, Ada.
Olmsted	Wm. L. Mercer, Rochester.
Ottertail	Antoinette Henderson, Fergus Falls.
Pennington	Geo. M. Gunderson, Thief River Falls.
Pine	Jens P. Miller, Pine City.
Pipestone	J. R. Campbell, Pipestone.
Polk	N. A. Thorson, Crookston.
Pope	Mrs. Julia Solverud, Glenwood.
Ramsey	Geo. H. Reif, St. Paul.
Red Lake	Mrs. Lou F. Quesnell, Red Lake Falls.
Redwood	Mrs. Adelia Pratt Duncan, Redwood Falls.
Renville	Amalia M. Bengtson, Olivia.
Rice	J. H. Lewis, Faribault.
Rock	Edla A. Headley, Luverne.
Roseau	Eddy E. Billberg, Roseau.
MINNESOTA—con.	
St. Louis	C. H. Barnes, Duluth.
Scott	H. J. Fitzpatrick, Shakopee.
Sherburne	Mrs. Ada P. Conger, Becker.
Sibley	Martha Beatty, Gaylord.
Stearns	W. A. Boerger, St. Cloud.
Steele	A. E. Kenyon, Owatonna.
Stevens	Ray S. Roberts, Morris.
Swift	Tillie S. Thomasson, Benson.
Todd	O. B. De Laurier, Long Prairie.
Traverse	Bessie Caswell, Wheaton.
Wabasha	George H. Booth, Lake City.
Wadena	Austin C. Kennedy, Wadena.
Waseca	H. C. Van Loh, Waseca.
Washington	E. E. Bloomquist, Stillwater.
Watonwan	Mabel Madson, St. James.
Wilkin	Lucile Shirley, Breckenridge.
Winona	A. C. Loomis, Winona.
Wright	A. A. Zech, Annandale.
Yellow Medicine	Lue A. Olds, Granite Falls.
MISSISSIPPI.	
Adams	M. C. Montgomery, Natchez.
Alcorn	W. F. Seago, Corinth.
Amite	J. N. Steele, Liberty.
Attala	F. R. McKinnon, Kosciusko.
Benton	W. T. Renick, Ashland.
Bolivar	A. K. Eckles, Cleveland.
Calhoun	W. W. Hannaford, Pittsboro.
Carroll	D. D. Fullilove, Vaiden.
Chickasaw	Geo. D. Riley, Houston.
Choctaw	C. J. Murphy, Ackerman.
Claiborne	C. A. McAmis, Violet.
Clarke	J. R. Brock, Florence.
Clay	E. H. Walker, West Point.
Coahoma	P. F. Williams, Friars Point.
Copiah	J. Q. Martin, Hazlehurst.
Covington	Alex. Newton, Collins.
De Soto	R. E. L. Morgan, Hernando.
Forrest	J. C. Gay, Hattiesburg.
Franklin	B. H. Lewis, Meadville.
George	W. H. Stinson, Sandersville.
Greene	E. L. Turner, Richton, R. 4.
Grenada	M. McKibben, Grenada.
Hancock	T. E. Kellar, Nicholson.
Harrison	R. V. Temming, PassChristian.
Hinds	F. M. Coleman, Jackson.
Holmes	G. H. Love, Goodman.
Humphreys	T. D. Rice, Belzoni.
Issaquena	Geo. Robinson, Mayersville.
Itawamba	H. L. Gillespie, Nettleton, R. 4.
Jackson	A. L. Flurry, Pascagoula.
Jasper	J. Q. Ritchie, Bay Springs.
Jefferson	M. C. Harper, Fayette.
Jefferson Davis	G. L. Martin, Prentiss.
Jones	C. W. Jenkins, Laurel.
Kemper	W. W. Sheppard, Dekalb.
Lafayette	H. T. Smith, Oxford.
Lamar	L. T. Williamson, Sumrall.
Lauderdale	J. A. Riddell, Lauderdale.
Lawrence	W. L. McGahey, Monticello.
Leake	C. K. Waggoner, Carthage.
Lee	R. A. Gregory, Plantersville.
Leflore	L. S. Rogers, Schlater.
Lincoln	Russell Ellzey, Brookhaven.
Lowndes	E. A. Stanley, Columbus.
Madison	R. E. Hinton, Canton.
Marion	H. F. Patterson, Spring Cottage.
Marshall	C. H. Curd, Holly Springs.
Monroe	H. G. Howell, Quincy.
Montgomery	W. R. Applewhite, Winona.
Neshoba	R. C. Peebles, Philadelphia.
Newton	E. H. Reynolds, Decatur.
Noxubee	J. G. Chandler, Macon.
Oktibbeha	C. E. Scroggins, Starkville.
Panola	J. E. Johnson, Batesville.
Pearl River	C. E. Bass, Poplarville.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
MISSISSIPPI—con.	
Perry	L. D. Young, New Augusta.
Pike	S. W. Simmons, Magnolia.
Pontotoc	W. G. Henry, Algoma.
Prentiss	J. W. Taylor, Booneville.
Quitman	F. M. Bizzell, Marks.
Rankin	H. B. Barksdale, Fannin.
Scott	O. D. Loper, Forest.
Sharkey	J. N. Hall, Rolling Fork.
Simpson	T. A. Williamson, Magee.
Smith	Allen Caughman, Raleigh.
Stone	Buren Broadus, Wiggins.
Sunflower	W. P. Sanders, Indianola.
Tallahatchie	J. W. McCulloch, Greenville.
Tate	Ira G. Allen, Senatobia.
Tippah	J. E. Pearce, Ripley.
Tishomingo	J. O. Epps, Dennis.
Tunica	W. G. Jaquess, Tunica.
Union	E. Blizzard, Myrtle.
Walthall	J. J. Lee, Tylertown.
Warren	J. H. Culkin, Vicksburg.
Washington	B. L. Hatch, Greenville.
Wayne	J. M. Wilkins, Waynesboro.
Webster	Z. V. Sugg, Bellefontaine.
Wilkinson	John C. Day, Woodville.
Winston	E. C. Lovorn, Louisville.
Yalobusha	C. A. Lawshe, Water Valley.
Yazoo	Hugh Bull, Yazoo City.
MISSOURI.	
Adair	P. J. Fowler, Kirksville.
Andrew	D. D. Hooper, Savannah.
Atchison	Sallie V. Grobe, Rock Port.
Audrain	Ed. C. Offutt, Mexico.
Barry	W. E. Hankins, Cassville.
Barton	L. E. Brous, Lamar.
Bates	A. C. Moreland, Butler.
Benton	Chas,. G. Harvey, Warsaw.
Bollinger	W. M. Welker, Marble Hill.
Boone	Charles E. Northcutt, Columbia.
Buchanan	Fred Roach, St. Joseph.
Butler	S. O. Holloway, Poplar Bluff.
Caldwell	D. N. McClintock, Kingston.
Callaway	J. C. Humphreys, Fulton.
Camden	M. E. Johnson, Linn Creek.
Cape Girardeau	J. T. McDonald, Jackson.
Carroll	Arch M. Earp, Carrollton.
Carter	H. D. Condray, Ellsinore.
Cass	C. A. Burke, Harrisonville.
Cedar	W. H. Riley, Stockton.
Chariton	C. C. Carlstead, Keytesville.
Christian	J. Tom Mapes, Ozark.
Clark	Alberta Callison, Kahoka.
Clay	E. L. Black, Liberty.
Clinton	Mrs. Anna L. Sims, Plattsburg.
Cole	A. H. Sieve, Jefferson City.
Cooper	W. B. Downing, Boonville.
Crawford	Wm. M. Chapman, Steelville.
Dade	R. L. Myers, Greenfield.
Dallas	Benj. F. Rea, Buffalo.
Daviess	Hallie Burton, Gallatin.
Dekalb	Mrs. Lou P. McAdam, Maysville.
Dent	Robert W. Crow, Salem.
Douglas	T. J. Moorhouse, Ava.
Dunklin	E. D. McAnally, Kennett.
Franklin	A. F. Borberg, Union.
Gasconade	A. O. Mann, Hermann.
Gentry	Earle C. Duncan, Albany.
Greene	C. W. McCroskey, Springfield.
Grundy	Elizabeth Brainerd, Trenton.
Harrison	E. Newton Carter, Bethany.
Henry	Kathryn Spangler, Clinton.
Hickory	B. B. Ihrig, Wheatland.
Holt	Mrs. Alberta G. Murphy, Oregon.
Howard	Luman L. Spry, Fayette.
Howell	Mrs. Carrie A. Preston, West Plains.
MISSOURI—con.	
Iron	G. W. Hanson, Ironton.
Jackson	L. F. Blackburn, Independence.
Jasper	Walter Colley, Carthage.
Jefferson	R. B. Wilson, Hillsboro.
Johnson	Ernest S. Wood, Warrensburg.
Knox	Mrs. Anna L. Swartz, Edina.
Laclede	G. C. Jones, Lebanon.
Lafayette	Elmer H. White, Lexington.
Lawrence	Harry Moore, Mount Vernon.
Lewis	W. B. Anderson, Monticello.
Lincoln	Zula Thurman, Troy.
Linn	J. F. Hortenstine, Brookfield.
Livingston	J. J. Jordan, Chillicothe.
McDonald	P. M. Collings, Pineville.
Macon	O. L. Cross, Macon.
Madison	W. S. Cooper, Fredericktown.
Maries	George B. John, Vienna.
Marion	L. Francis Nelson, Palmyra.
Mercer	Agnes Rank, Princeton.
Miller	H. M. Atwell, Tuscumbia.
Mississippi	Mrs. Clara E. Graham, Charleston.
Moniteau	Charles R. Milburn, California.
Monroe	L. D. Ash, Paris.
Montgomery	W. F. Hupe, Montgomery City.
Morgan	M. Wray Witten, Versailles.
New Madrid	P. J. Stearns, New Madrid.
Newton	W. E. Veerkamp, Neosho.
Nodaway	A. H. Cooper, Maryville.
Oregon	James O. Dotson, Alton.
Osage	Myra O. Reed, Linn.
Ozark	J. B. Huffman, Gainesville.
Pemiscot	Chas. G. Ross, Caruthersville.
Perry	Vera M. Abbott, Perryville.
Pettis	T. R. Luckett, Sedalia.
Phelps	A. Z. Black, Rolla.
Pike	O. A. Wilson, Bowling Green.
Platte	Gertrude A. Fulcher, Platte City.
Polk	Mrs. Mabel Douglas, Bolivar.
Pulaski	J. C. Underwood, Crocker.
Putnam	H. U. G. Turnmire, Unionville.
Ralls	L. C. Northcutt, New London.
Randolph	William Robertson, Huntsville.
Ray	W. T. McGaugh, Richmond.
Reynolds	J. G. Hartman, Centerville.
Ripley	C. N. Pennington, Doniphan.
St. Charles	Benj. H. Jolly, St. Charles.
St. Clair	David W. Denney, Osceola.
St. Francois	J. Clyde Akers, Farmington.
Ste. Genevieve	Vivian Gaty, Ste. Genevieve.
St. Louis	R. G. Russell, Clayton.
Saline	W. C. Fisher, Marshall.
Schuyler	Mrs. Lillie Hollowell, Lancaster.
Scotland	Mrs. Arla Williams, Memphis.
Scott	M. E. Montgomery, Benton.
Shannon	Walter Webb, Birch Tree.
Shelby	Mrs. Myrtle Threlkeld, Shelbyville.
Stoddard	Mrs. C. E. Smith, Bloomfield.
Stone	L. V. Threlfall, Galena.
Sullivan	Blanche Summers, Milan.
Taney	J. W. Bennett, Forsyth.
Texas	James K. Connolly, Houston.
Vernon	Lizzie L. White, Nevada.
Warren	F. W. Kehr, Marthasville.
Washington	Burwell Fox, Potosi.
Wayne	C. E. Burton, Piedmont.
Webster	Sam A. Miller, Marshfield.
Worth	Edna Craven, Grant City.
Wright	Ray Wood, Hartville.
MONTANA.	
Beaverhead	Elizabeth Sutherland, Dillon.
Big Horn	Lucy Batty, Hardin.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.
MONTANA—con.	
Blaine	Elizabeth Crookshanks, Chinook.
Broadwater	Opal Cronk, Townsend.
Carbon	Asgerd Haaland, Red Lodge.
Carter	Mrs. De Loss Hall, Ekalaka.
Cascade	Jane Keeney, Great Falls.
Chouteau	Mrs. A. H. Kelly, Fort Benton.
Custer	Olive H. Lovett, Miles City.
Daniels	Mabel V. Thayer, Scobey.
Dawson	Camilla Osborne, Glendive.
Deer Lodge	May Russell, Anaconda.
Fallon	Mildred Lamb, Baker.
Fergus	Amanda O. Swift, Lewistown.
Flathead	Mary Eckstein, Kalispell.
Gallatin	Daisie E. Forrest, Bozeman.
Garfield	Lois H. Quinn, Jordan.
Glacier	Grace Thompson, Cut Bank.
Golden Valley	Corlie F. Dunster, Ryegate.
Granite	Mrs. Lottie T. Irvine, Philipsburg.
Hill	Elizabeth Ireland, Havre.
Jefferson	Lilah Halford, Boulder.
Lewis and Clark	Mrs. May C. Bartos, Helena.
Liberty	Nellie G. Poland, Chester.
Lincoln	Mrs. Carrie M. Spence, Libby.
McCone	Ina L. Seeley, Circle.
Madison	Mary Bull, Virginia City.
Meagher	Mrs. Grace Stone Coates, White Sulphur Springs.
Mineral	Mrs. J. J. Welch, Superior.
Missoula	Mrs. Mabel Campbell, Missoula.
Musselshell	Minnie F. Ferguson, Roundup.
Park	Elsie Mercier, Livingston.
Phillips	Flora Sims, Malta.
Pondera	Lucretia Goff, Conrad.
Powder River	Winona Lewis, Broadus.
Powell	Irene Coughlin, Deer Lodge.
Prairie	Mrs. Annie E. Lowall, Terry.
Ravalli	Bethel Irwin, Hamilton.
Richland	Mrs. Emogene Lectra, Sidney.
Roosevelt	Mrs. Nina McFarlan, Mondak.
Rosebud	Mrs. Sallie M. Adams, Forsyth.
Sanders	Mrs. Ethel Toulmin, Thompson Falls.
Sheridan	Ellen Wilson, Plentywood.
Silver Bow	Mrs. Nellie Small, Butte.
Stillwater	Gertrude Sylvester, Columbus.
Sweet Grass	Inga Solberg, Big Timber.
Teton	Ruth Sweat, Chouteau.
Toole	Josephine Moberly, Shelby.
Treasure	Mrs. Lillian Newnes, Hysham.
Valley	Nellie Johonnott, Glasgow.
Wheatland	Bertha Lunceford, Harlowton.
Wibaux	Mrs. Maude B. Wills. Wibaux.
Yellowstone	Frances Miller, Billings.
NEBRASKA.	
Adams	Mary Dungan, Hastings.
Antelope	C. A. Mohrman, Neligh.
Arthur	Mrs. D. G. Williams, Arthur.
Banner	Fred L. Johnson, Harrisburg.
Blaine	A. L. Shamblin, Brewster.
Boone	Bertha M. Sheckler, Albion.
Box Butte	Opal Russell, Alliance.
Boyd	Nellie Mae Edwards, Butte.
Brown	Mrs. Lenna Morris, Ainsworth.
Buffalo	Katheryn Laughlin, Kearney.
Burt	W. T. Poucher, Tekamah.
Butler	Oma L. Cady, David City.
Cass	Alpha Peterson, Plattsmouth.
Cedar	Emma Schwerin, Hartington.
Chase	Nellie E. Dick, Imperial.
Cherry	Edith Adamson, Valentine.
Cheyenne	Anna McFadden, Sidney.
Clay	L. J. Gilkeson, Clay Center.
NEBRASKA—con.	
Colfax	F. J. Vogltance, Schuyler.
Cuming	Emma R. Miller, West Point.
Custer	T. C. Grimes, Broken Bow.
Dakota	Wilfred E. Voss, Dakota.
Dawes	Edna Rincker, Chadron.
Dawson	W. C. Bloom, Lexington.
Deuel	Retta F. Brown, Chappell.
Dixon	W. F. Richardson, Ponca.
Dodge	J. E. Marsh, Fremont.
Douglas	Mabel Johnson, Omaha.
Dundy	Una Richards, Benkelman.
Fillmore	Margaret Haughawaut, Geneva.
Franklin	Pearl O'Neal, Bloomington.
Frontier	Goldie P. Stark, Stockville.
Furnas	G. W. Fletcher, Beaver City.
Gage	Bertha Foster, Beatrice.
Garden	Esther Johnson, Oshkosh.
Garfield	Florence Alderman, Burwell.
Gosper	F. W. Montgomery, Elwood.
Grant	Winifred Moran, Hyannis.
Greeley	Margaret L. Tracy, Greeley.
Hall	W. A. Julian, Grand Island.
Hamilton	Arthur S. Nelson, Aurora.
Harlan	Frances E. White, Alma.
Hayes	Edgiththa Grant, Hayes Center.
Hitchcock	Evelyn Besack, Trenton.
Holt	Anna Donohoe, O'Neill.
Hooker	J. H. Garrett, Mullen.
Howard	W. G. Baker, St. Paul.
Jefferson	Eva B. Shuman, Fairbury.
Johnson	Helen Wright, Tecumseh.
Kearney	Minnie Norlin, Minden.
Keith	Katherine Feather, Ogalalla.
Keyapaha	Abbie F. Pelletier, Springview.
Kimball	Rachel McElroy, Kimball.
Knox	A. S. Stinson, Center.
Lancaster	Jeanette C. Nelson, Lincoln.
Lincoln	Aileen Cochran, North Platte.
Logan	A. C. Loshbaugh, Gandy.
Loup	Marcia Smith, Taylor.
McPherson	O. A. Johnson, Tryon.
Madison	N. A. Housel, Madison.
Merrick	Margaret McCutchen, Central City.
Morrill	E. F. Kelley, Bridgeport.
Nance	Chloe Baldridge, Fullerton.
Nemaha	Bess E. Anderson, Auburn.
Nuckolls	Mildred Mauck, Nelson.
Otoe	Chas. Speedie, Nebraska City.
Pawnee	Bertha Kuhlmann, Pawnee City.
Perkins	Mrs. Margaret Bailar, Grant.
Phelps	Alice A. Swanson, Holdrege.
Pierce	Marjorie Parminter, Pierce.
Platte	Fred S. Lecron, Columbus.
Polk	Amelia Rasmussen, Osceola.
Red Willow	Helen Cousce, McCook.
Richardson	D. H. Weber, Falls City.
Rock	Evlyn W. Towle, Bassett.
Saline	L. J. Bouchal, Wilber.
Sarpy	Bertha Bishop, Papillion.
Saunders	E. A. Adman, Wahoo.
Scotts Bluff	Ada Haldeman, Gering.
Seward	J. C. Greenwood, Seward.
Sheridan	Pearle E. Summers, Rushville.
Sherman	L. H. Currier, Loup City.
Sioux	Vinnie Newell, Harrison.
Stanton	S. E. Eddy, Stanton.
Thayer	H. E. Barbee, Hebron.
Thomas	Inez L. Oakes, Tredford.
Thurston	Ellen M. Brown, Pender.
Valley	Lelia Mooreman, Ord.
Washington	Mabel Marsh, Blair.
Wayne	Pearl Sewell, Wayne.
Webster	Estelle Ducker, Red Cloud.
Wheeler	Edith Bowler, Bartlett.
York	T. C. Lord, York.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

Counties in district.	District superintendent.
NEVADA.	
District No. 1: Elko.	E. E. Franklin, Elko.
District No. 2: Eureka, Lander, White Pine.	James V. Comerford, Ely.
District No. 3: Churchill, Humboldt, Pershing.	Chauncey W. Smith, Fallon.
NEVADA—contd.	
District No. 4: Douglas, Lyon, Mineral, Ormsby, Storey, Washoe.	M. J. Burr, Carson City.
District No. 5: Clark, Esmeralda, Lincoln, Nye.	T. W. Chapman, Las Vegas.

Towns in union.	Union superintendent.
NEW HAMPSHIRE.	
Acworth, Charlestown, Langdon, Lempster, Marlow.	H. Lawton Chase, Charlestown.
Albany, Madison, Sandwich, Tamworth.	Samuel S. Brooks, Madison.
Alexandria, Bridgewater, Bristol, Groton, Hebron.	Charles A. Breck, Bristol.
Allenstown, Bow, Epsom, Hooksett, Pembroke.	Henry S. Roberts, Suncook.
Alstead, Chesterfield, Walpole, Westmoreland.	William J. English, Walpole.
Alton, Farmington Special, New Durham, Tuftonboro, Wolfeboro.	Fred W. Landman, Wolfeboro.
Amherst, Brookline, Milford, Mont Vernon.	Harold C. Bales, Milford.
Andover, Danbury, Grafton, New London, Wilmot.	Idelia K. Farnum, Andover.
Antrim, Deering, Hillsborough, Washington, Windsor.	Amasa A. Holden, Hillsboro.
Ashland, Dorchester, Holderness, Rumney.	Clarence M. Harris, Ashland.
Atkinson, Hampstead, Newton, Plaistow, Salem, South Hampton.	James A. MacDougall, Salem.
Auburn, Candia, Chester, Deerfield, Raymond.	Albert T. Lane, Raymond.
Barnstead, Chichester, Gilmanton, Pittsfield.	Frederick T. Johnson, Pittsfield.
Barrington, Durham, Greenland, Lee, Madbury, Newmarket.	Justin O. Wellman, Newmarket.
Bartlett, Chatham, Conway, Hart's Location, Jackson, Livermore.	Llewellyn M. Felch, North Conway.
Bath, Benton, Haverhill, Monroe.	Norman J. Page, Woodsville.
Bedford, Goffstown, New Boston.	Howard L. Winslow, Goffstown.
Belmont, Gilford, Northfield, Tilton.	Channing T. Sanborn, Tilton.
NEW HAMPSHIRE—continued.	
Bennington, Dublin, Greenfield, Hancock, Francestown, Peterborough.	Leon E. Prior, Peterboro.
Bethlehem, Littleton.	Guy E. Speare, Littleton.
Boscawen, Canterbury, Loudon, Penacook, Salisbury.	George W. Sumner, Penacook.
Bradford, Newbury, Sutton, Warner, Webster.	George H. Harmon, Warner.
Brentwood, Exeter, Kensington, Newfields, Stratham.	Clifton A. Towle, Exeter.
Brookfield, Middleton, Milton-Wakefield.	Fred W. Dudley, Union.
Campton, Ellsworth, Lincoln, Thornton, Woodstock.	Alonzo J. Knowlton, North Woodstock.
Canaan, Enfield, Orange, Springfield.	Edgar F. Callahan, Enfield.
Carroll, Dalton, Whitefield.	Wesley H. Douglass, Whitefield.
Center Harbor, Meredith, Moultonborough, New Hampton.	William H. Buker, Meredith.
Clarksville, Pittsburg, Stewartstown.	Earl P. Freese, West Stewartstown.
Colebrook, Columbia.	Arthur C. Irish, Colebrook.
Cornish, Corydon, Plainfield.	Andrew P. Averill, Cornish Flat.
Danville, East Kingston, Epping, Fremont, Kingston, Nottingham, Sandown.	Fred E. Pitkin, Epping.
Derry, Londonderry, Windham.	Charles W. Cutts, Derry.
Dummer, Errol, Milan, Wentworth's Location.	Everett J. Best, Milan.
Dunbarton, Henniker, Hopkinton, Weare.	Fred S. Libbey, Henniker.
Easton, Franconia, Landaff, Lisbon, Lyman.	Geo. R. Gardiner, Lisbon.

XI.—County and Other Local Superintendents of Schools—Continued.

Towns in union.	Union superintendent.
NEW HAMPSHIRE—continued.	
Eaton, Effingham, Freedom, Ossipee.	Harold C. Wingate, Mountainview.
Farmington, Northwood, Strafford.	Walton S. Adams, Northwood Center.
Fitzwilliam, Jaffrey, Rindge, Sharon, Troy.	Lewis S. Record, East Jaffrey.
Franklin, Hill, Sanbornton.	George A. Keith, Franklin.
Gilsum, Harrisville, Marlborough, Nelson, Roxbury, Stoddard, Sullivan, Surry.	Vernon S. Ames, Marlboro.
Gorham, Randolph (Success), Shelburne.	——— ———, Gorham.
Goshen, Newport, Sunapee, Unity.	William H. S. Ellingwood, Newport.
Grantham, Lebanon.	H. Leslie Sawyer, Lebanon.
Greenville, Lyndeborough, Mason, New Ipswich, Temple, Wilton.	Ralph P. Currier, Wilton.
Hampton, Hampton Falls, Newcastle, Newington, North Hampton, Rye, Seabrook.	Charles H. Walker, Hampton.
Hanover, Lyme.	——— ———, Lebanon.
Hinsdale, Richmond, Swanzey, Winchester.	George O. Smith, Hinsdale.
Hollis, Hudson, Litchfield, Merrimack, Pelham.	Louis D. Record, 16 Summer St., Nashua.
Jefferson, Lancaster.	Eugene Tuttle, Lancaster.
Northumberland, Stark, Stratford.	Orin M. Holman, North Stratford.
Orford, Piermont, Warren, Wentworth.	Carl T. Rhoades, Wentworth.
Rollinsford, Somersworth.	——— ———, Somersworth.

County.	County superintendent.
NEW JERSEY.	
Atlantic	H. M. Cressman, Egg Harbor City.
Bergen	B. C. Wooster, Hackensack.
Burlington	L. J. Kaser, Mount Holly.
Camden	C. S. Albertson, Camden.
Cape May	Aaron W. Hand, Cape May Court House.
Cumberland	J. J. Unger, Bridgeton.
Essex	Oliver J. Morelock, Newark.
Gloucester	D. T. Steelman, Woodbury.
Hudson	A. H. Updyke, Jersey City.
Hunterdon	J. S. Hoffman, Flemington.
Mercer	J. M. Arnold, Trenton.
Middlesex	H. B. Willis, New Brunswick.
Monmouth	C. J. Strahan, Freehold.
Morris	J. H. Hulsart, Morristown.
Ocean	C. A. Morris, Toms River.
Passaic	E. W. Garrison, Paterson.
Salem	H. C. Dixon, Salem.
Somerset	Henry C. Krebs, Somerville.
Sussex	Ralph Decker, Newton.
Union	A. L. Johnson, Elizabeth.
Warren	Howard E. Shimer, Belvidere.
NEW MEXICO.	
Bernalillo	Mrs. John Wilson, Albuquerque.
Chaves	Mrs. T. W. Hayes, Roswell.
Colfax	R. C. Bonney, Raton.
Curry	J. M. Bickley, Clovis.
De Baca	Mrs. Rachel V. Smith, Fort Sumner.
NEW MEXICO—con.	
Dona Ana	R. E. McBride, Las Cruces.
Eddy	George M. Brinton, Carlsbad.
Grant	Mrs. Maude A. Fielder, Silver City.
Guadalupe	Placido Baca y Baca, Santa Rosa.
Hidalgo	Louella S. Clark, Lordsburg.
Lea	Mrs. Sarah K. Ellis, Lovington.
Lincoln	Mrs. Maude L. Blaney, Carrizozo.
Luna	Mrs. Alice Smith, Deming.
McKinley	H. W. Brose, Gallup.
Mora	Alfredo Lucero, Mora.
Otero	R. S. Tipton, Alamogordo.
Quay	J. A. Atkins, Tucumcari.
Rio Arriba	Jose Gregorio Valdez, Tierra Amarilla.
Roosevelt	Sam J. Stinett, Portales.
Sandoval	Edmundo Monteya, Bernalillo.
San Juan	Earl Douglas, Aztec.
San Miguel	Benito F. Baca, Las Vegas.
Santa Fe	Nina Otero Waren, Santa Fe.
Sierra	Hazel Belle Reiley, Hillsboro.
Socorro	Eliseo M. Chavez, Socorro.
Taos	Jos Montaner, Taos.
Torrance	Thomas B. Rapkoch, Estancia.
Union	A. L. England, Clayton.
Valencia	Adelino Sanchez, Belen.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	District superintendent.
NEW YORK.	
Albany	E. E. Richmond, Ravenna.
	W. J. Haverly, West Berne.
	Warren, Ratcliffe, Albany.
Allegany	Frank L. Tuthill, Fillmore.
	John D. Jones, Cuba.
	O. M. Burdick, Little Genesse.
	W. H. Carwood, Canaseraga.
	Willet, L. Ward, Wellsville.
Broome	Harvey B. Heath, Ouaquaga.
	J. E. Hurlburt, Windsor.
	K. E. Beilby, Union.
	Erwin B. Whitney, Whitney Point.
Cattaraugus	Joel J. Crandall, Franklinville.
	Gilbert A. Farwell, Hinsdale.
	C. S. Palmer, Salamanca.
	G. E. Waller, Little Valley.
	E. A. Stratton, Randolph.
Cayuga	H. S. R. Murphy, Cato.
	H. T. Morrison, Weedsport
	Anna M. Kent, Union Springs.
	G. B. Springer, Genoa.
	Mabel C. L. Rodger, Moravia.
Chautauqua	J. N. Palmer, Cassadaga.
	J. M. Barker, Jamestown.
	Mrs. D. B. Connelly, Stowe.
	J. G. Pratt, Sherman.
	L. Waldo Swain, Westfield.
	J. S. Wright, Falconer.
Chemung	Walter C. King, Horseheads.
	Harriet Easterbrook, Elmira.
Chenango	Ellen B. Bradshaw, Lincklaen
	Albert C. Bowers, New Berlin
	J. S. Childs, Oxford.
	Jane I. Schenck, Greene.
	Mary L. Isbell, Norwich.
Clinton	Oliver A. Wolcott, Keeseville.
	Ernest B. Sargeant, Ellenburg.
	Clara E. Soden, Mooers Forks.
	Katherine McMartin, Plattsburg.
Columbia	S. B. Smith, East Chatham.
	R. N. Saunders, Hudson.
	M. G. Rickey, Ancram.
Cortland	W. K. Patrick, Cuyler.
	Ada M. Shuler, Solon.
	C. D. Carter, Marathon, R. 3.
Delaware	C. W. Vandergrift, Sidney.
	Z. Le R. Myers, Downesville.
	E. O. Harkness, Delhi.
	Fayette Whitney, Roxbury.
	M. G. Nelson, Franklin.
	A. T. Hamilton, North Harpersfield.
Dutchess	Frank L. Haight, Fishkill.
	Clayton T. Sherman, Poughkeepsie.
	William R. Tremper, Rhinebeck.
	F. O. Green, Tivoli.
Erie	C. A. Heist, Clarence.
	H. A. Dann, Lancaster.
	W. E. Pierce, East Aurora.
	E. D. Ormsby, North Collins.
	W. E. Bensley, Springville.
Essex	C. J. Mousaw, Schroon Lake.
	Gertrude M. Spear, Westport.
	Mattie J. Prime, Upper Jay.
Franklin	Myrtle E. MacDonald, Chateaugay.
	G. La Graff, Tupper Lake.
	F. H. Wilcox, North Bangor.
	Gertrude E. Hyde, Moira.
Fulton	Fred A. Stryker, Stratford.
	John Paris, Broadalbin.
Genesee	H. W. Dyer, East Pembroke.
	J. L. M. Uphill, Batavia.
Greene	Thos. C. Perry, Catskill.
	R. M. MacNaught, Windham.
	Walter J. Decker, Hunter.
NEW YORK—con.	
Hamilton	C. B. Hanley, Wells.
Herkimer	A. J. Rose, West Winfield.
	Silas C. Kimm, Herkimer.
	C. B. Keller, Little Falls.
	B. M. Robinson, Poland.
Jefferson	C. M. Pierce, Adams.
	W. J. Linnell, Watertown.
	T. B. Stoel, Clayton.
	Mrs. R. W. Bowman, Watertown.
	D. D. T. Marshall, Redwood.
	Mrs. G. L. de Olloqui, Carthage.
Lewis	G. A. Sealey, Harrisville.
	Orson C. Babbitt, Lowville.
	Ruth M. Johnson, Port Leyden.
	A. W. Trainor, West Leyden.
Livingston	John P. Magee, Geneseo.
	G. C. McNinch, Conesus.
	R. G. Conklin, Tuscarora.
Madison	Irving S. Sears, Hamilton.
	A. I. Tyler, Cazenovia.
	E. A. Fuller, Morrisville.
	John B. Harris, Canastota.
Monroe	W. W. Rayfield, Webster.
	M. B. Furman, East Rochester.
	Fred W. Hill, Spencerport.
	John C. Malloch, Churchville.
Montgomery	N. Berton Alter, Nelliston.
	Walter Elwood, Amsterdam.
Nassau	James S. Cooley, Mineola.
	W. C. Mepham, Merrick.
Niagara	W. D. Wisner, Ransomville.
	Orrin A. Kold, Lockport, R. F. D. 5.
	M. Gazelle Hoffman, Lewiston.
Oneida	Glenn G. Steele, Utica.
	Harry C. Buck, Clayville.
	W. J. Lewis, Clinton.
	F. E. Mathewson, Verona.
	Stanton D. Austin, Barneveld.
	Pauline L. Scott, Blossvale.
	Daniel M. Blue, Boonville.
Onandaga	M. E. Hinman, Tully.
	G. T. Fuggle, Jamesville.
	E. E. McDowell, Memphis.
	Manford D. Green, Liverpool.
	Jennie A. Cowles, Skaneateles.
Ontario	Leon J. Cook, East Bloomfield.
	H. S. G. Loveless, Phelps.
	E. G. Soper, Seneca Castle.
	G. A. Bolles, Naples.
Orange	Theron L. McKnight, Central Valley.
	O. Eichenberg, Monroe.
	S. A. Cortright, Middletown.
Orleans	Mary J. Franklin, Medina.
	Cora V. Luttenton, Albion.
	Charles W. Smith, Holley.
Oswego	Mildred G. Pratt, Lacona.
	J. M. Bonner, Richland.
	Aura A. Cole, Constantia.
	Charles I. Kingsbury, Mexico.
	W. S. Gardner, Fulton.
Otsego	J. B. McManus, Cooperstown.
	Menzo Burlingame, Westford.
	Grace A. Louden, Cooperstown.
	John F. Frederick, Oneonta.
	Harrison Cossaart, Morris.
	Floyd R. Thayer, Edmeston.
Putnam	A. J. Williams, Brewster.
Rensselaer	Mary Haswell, Troy.
	Mrs. Adelaide W. Gardner, Stephentown.
	H. G. Grubel, East Greenbush.
Rockland	George W. Miller, Nanuet.
St. Lawrence	W. T. Clark, Hailesboro.
	F. H. Wallace, Morristown.
	Carlos S. Blood, Heuvelton.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	District superintendent.
NEW YORK—con.	
St. Lawrence—(continued).	V. C. Warriner, Lisbon.
	Rose M. Libby, Canton.
	Mrs. E. D. Grubb, Potsdam.
	E. F. McDonald, Massena.
	A. J. Fields, Winthrop.
Saratoga	A. A. Lavery, Round Lake.
	Lou Messinger, Ballston Spa.
	E. E. Hinman, Schuylerville.
	A. M. Hollister, Corinth.
Schenectady	Frank W. Palmer, Schenectady.
Schoharie	Orlando J. Ives, Jefferson.
	Frederick Cornwall, Middleburg.
	R. W. Eldredge, Sharon Springs.
Schuyler	Alberta Spaulding, Burdett.
	Jennie M. Ellison, Reading Center.
Seneca	W. S. Wilson, Ovid.
	Charles B. Earl, Waterloo.
Steuben	Frank H. Smith, Addison.
	Winfred Morrow, Bath.
	Howard Harrison, Addison.
	F. C. Wilcox, Greenwood.
	H. M. Brush, Arkport.
	Guyon J. Carter, Avoca.
	J. G. McConnell, Prattsburg.
Suffolk	P. B. Matthews, Bridgehampton.
	J. Henry Young, Central Islip.
	Leonard J. Smith, Northport.
Sullivan	F. J. Lewis, Barryville.
	Charles S. Hick, Jeffersonville.
	Mrs. Emma C. Chase, Monticello.
Tioga	A. E. Belden, Newark Valley.
	M. D. Goodrich, Tioga Center.
	Mrs. H. T. Whittemore, Owego.
Tompkins	Fred A. Beardsley, Trumansburg.
	Hattie K. Buck, Groton.
	John D. Bigelow, Ithaca.
Ulster	Emily S. Burnett, Kingston, Station R.
	J. U. Gillette, Port Ewen.
	Elsie J. Roat, Ellenville.
	W. J. Andrews, Oliverea.
Warren	F. F. Gunn, Glens Falls.
	J. R. Stickney, Bolton Landing.
	Mrs. Rose Minnick, Glens Falls.
Washington	Amelia Blasdell, Whitehall.
	Mrs. E. M. S. Devine, Hudson Falls.
	Mary A. Potter, Greenwich, R. F. D. 4.
	F. H. Rich, Salem.
Wayne	Mrs. Helen C. Andrews, Lyons.
	Mrs. Ida E. Cosad, Wolcott.
	Albert H. McMurray, Walworth.
	Lewis H. Clark, Sodus.
Westchester	S. J. Preston, White Plains.
	C. H. Cheney, White Plains.
	G. H. Covey, Katonah.
	R. D. Knapp, Purdy Station.
Wyoming	J. T. McGurren, Bliss.
	Harriet M. Patch, Cowlesville.
	G. H. Stratton, Castile.
Yates	J. F. Bullock, Penn Yan.
	E. P. Corbit, Rushville.
NORTH CAROLINA.	**COUNTY SUPERINTENDENT.**
Alamance	M. C. Terrell, Graham.
Alexander	A. F. Sharpe, Stony Point.
Alleghany	A. O. Joines, Stratford.
Anson	W. C. Bivens, Wadesboro.
Ashe	C. M. Dickson, Silas Creek.

County.	County superintendent.
NORTH CAROLINA—continued.	
Avery	Frank A. Edmonson, Newland.
Beaufort	H. H. McLean, Washington.
Bertie	H. W. Early, Windsor
Bladen	B. J. Cromartie, Garland.
Brunswick	M. C. Guthrie, Southport.
Buncombe	Ethel Terrell, Asheville.
Burke	T. L. Sigmon, Morganton.
Cabarrus	J. B. Robertson, Concord.
Caldwell	Y. D. Moore, Lenoir
Camden	F. M. Eason, Camden.
Carteret	L. B. Emmett, Stella.
Caswell	G. A. Anderson, Yanceyville.
Catawba	George E. Long, Newton.
Chatham	W. R. Thompson, Pittsboro.
Cherokee	A. L. Martin, Murphy.
Chowan	M. L. Wright, Edenton.
Clay	T. C. Scroggs, Hayesville.
Cleveland	J. Y. Irvin, Shelby.
Columbus	F. T. Wooten, Chadbourn.
Craven	R. S. Proctor, Newbern.
Cumberland	B. T. McBryde, Fayetteville.
Currituck	W. D. Cox, Moyock.
Dare	Mabel Evans, Manteo.
Davidson	S. G. Hasty, Lexington.
Davie	F. P. Bradley, Mocksville.
Duplin	M. H. Wooten, Kenansville.
Durham	Holland Holton, Durham.
Edgecombe	R. E. Sentelle, Tarboro.
Forsyth	W. B. Speas, Winston-Salem.
Franklin	E. L. Best, Louisburg.
Gaston	F. P. Hall, Belmont.
Gates	J. M. Glenn, Gatesville.
Graham	J. H. Moody, Robbinsville.
Granville	J. F. Webb, Oxford.
Greene	B. C. Williams, Snow Hill.
Guilford	Thos. R. Foust, Greensboro.
Halifax	A. E. Akers, Roanoke Rapids.
Harnett	R. G. Fitzgerald, Lillington.
Haywood	R. A. Sentell, Waynesville.
Henderson	W. S. Shitle, Hendersonville.
Hertford	N. W. Brinton, Winton.
Hoke	W. L. Foust, Raeford.
Hyde	G. M. Guthrie, Swan Quarter.
Iredell	James A. Steele, Statesville.
Jackson	Robt. L. Madison, Cullowhee.
Johnston	W. H. Hipps, Smithfield.
Jones	Alex H. White, Pollocksville.
Lee	E. M. Judd, Sanford.
Lenoir	George Howard, jr., Kinston.
Lincoln	L. B. Beam, Lincolnton.
McDowell	N. F. Steppe, Marion.
Macon	M. D. Billings, Franklin.
Madison	Fred C. Sams, Mars Hill.
Martin	A. J. Manning, Williamston.
Mechlenberg	J. M. Matthews, Charlotte.
Mitchell	D. W. Greene, Wing.
Montgomery	J. S. Edwards, Troy.
Moore	A. B. Cameron, Carthage.
Nash	L. S. Inscoe, Nashville.
New Hanover	W. A. Graham, Wilmington.
Northampton	P. J. Long, Jackson.
Onslow	W. M. Thompson, Jacksonville.
Orange	R. H. Claytor, Hillsboro.
Pamlico	T. A. Holton, Stonewall.
Pasquotank	M. P. Jennings, Elizabeth City.
Pender	T. T. Murphy, Burgaw.
Perquimans	Charles Whedbee, Hertford.
Person	J. A. Beam, Roxboro.
Pitt	S. B. Underwood, Greenville.
Polk	E. W. S. Cobb, Columbus.
Randolph	T. F. Bulla, Asheboro.
Richmond	L. J. Bell, Rockingham.
Robeson	J. R. Poole, Lumberton.
Rockingham	L. N. Hickerson, Reidsville.
Rowan	R. G. Kizer, Salisbury.
Rutherford	W. R. Hill, Rutherfordton.
Sampson	R. W. Isley, Clinton.
Scotland	L. M. Peele, Laurinburg.
Stanly	Charles A. Reap, Albemarle.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.
NORTH CAROLINA—continued.	
Stokes	J. C. Carson, Germanton.
Surry	J. H. Allen, Elkin.
Swain	J. M. Smiley, Bryson City.
Transylvania	A. F. Mitchell, Penrose.
Tyrrell	J. S. Spruill, Columbia.
Union	Ray Funderburk, Monroe.
Vance	E. M. Rollins, Henderson.
Wake	J. C. Lockhart, Raleigh.
Warren	J. Edward Allen, Warrenton.
Washington	John W. Darden, Plymouth.
Watauga	Smith Hagaman, Vilas.
Wayne	A. M. Proctor, Goldsboro.
Wilkes	C. C. Wright, Hunting Creek.
Wilson	C. L. Coon, Wilson.
Yadkin	J. T. Reece, Yadkinville.
Yancey	W O. Griffith, Windom.
NORTH DAKOTA.	
Adams	Rose Wagner, Hettinger.
Barnes	Nellie Witcher, Valley City.
Benson	Peter Anderson, Minnewaukan.
Billings	Mable I. Rapp, Medora.
Bottineau	Anna Burr, Bottineau.
Bowman	H. O. Saxvik, Bowman.
Burke	C. H. Hecht, Bowbells.
Burleigh	W. E. Parsons, Bismarck.
Cass	Mrs. Helen H. Porter, Fargo.
Cavalier	Fred J. Reher, Langdon.
Dickey	Faith Stevens, Ellendale.
Divide	J. H. Phelps, Crosby.
Dunn	M. L. Hill, Manning.
Eddy	Jesse Neff, New Rockford.
Emmons	H. H. Hanson, Linton.
Foster	Mary K. Beatty, Carrington.
Golden Valley	Clara L. French, Beach.
Grand Forks	M. Beatrice Johnstone, Grand Forks.
Grant	Mina Aasved, Carson.
Griggs	Tena P. Ragner, Cooperstown.
Hettinger	Shirley Fox, Mott.
Kidder	Bertha E. Hildebrandt, Steele.
Lamoure	Mrs. Cora E. Sabin, Lamoure.
Logan	Sol R. Eilert, Napoleon.
McHenry	A. C. Berg, Towner.
McIntosh	Geo. A. Boschma, Ahley.
McKenzie	F. J. Steffeck, Schafer.
McLean	M. E. McCurdy, Washburn.
Mercer	E. D. Goodwin, Stanton.
Morton	H. K. Jensen, Mandan.
Mountrail	V. A. Lovell, Stanley.
Nelson	P. J. Iverson, Lakota.
Oliver	Nellie Connolly, Center.
Pembina	Charlotte A. Jones, Cavalier.
Pierce	Sara C. Guss, Rugby.
Ramsey	John A. Haig, Devils Lake.
Ransom	Anne Rutherford, Lisbon.
Renville	Ludwig M. Rockne, Mohall.
Richland	Ethel K. Mertz, Wahpeton.
Rolette	Margaret Beede, Rolla.
Sargent	Henry Ulve, Forman.
Sheridan	J. N. Muehl, McClusky.
Sioux	L. W. Colebank, Swastika.
Slope	H. H. Bond, Amidon.
Stark	C. E. Ward, Dickinson.
Steele	Aagot Raaen, Finley.
Stutsman	Mary E. McGinnis, Jamestown.
Towner	Mamie Sorenson, Cando.
Traill	Anna Nestoss, Hillsboro.
Walsh	W. J. Hoover, Grafton.
Ward	A. M. Waller, Minot.
Wells	Senney Nertrost, Fessenden.
Williams	Annie McCradie, Williston.
OHIO.	
Adams	W. L. Hostetter, West Union.
Allen	C. A. Arganbright, Lima.
OHIO—continued.	
Ashland	J. N. Pinkerman, Ashland.
Ashtabula	C. D. Groves, Jefferson.
Athens	Alex. Root, Athens.
Auglaize	Glen Drummond, Wapakoneta.
Belmont	Geo. M. Pogue, St. Clairsville.
Brown	E. V. Stephan, Georgetown.
Butler	John Schwarz, Hamilton.
Carroll	G. E. Bell, Carrollton.
Champaign	J. C. Neer, Urbana.
Clark	J. M. Collins, Springfield.
Clermont	B. T. Davis, Batavia.
Clinton	H. W. Hodson, Wilmington.
Columbiana	John W. Moore, Lisbon.
Coshocton	L. C. Shaw, Coshocton.
Crawford	F. G. Bittikofer, Bucyrus.
Cuyahoga	A. G. Yawberg, Cleveland.
Darke	C. A. Wilt, Greenville.
Defiance	W. W. Heater, Defiance.
Delaware	Paul M. Lybarger, Delaware.
Erie	I. S. Winner, Sandusky.
Fairfield	C. G. Johnson, Lancaster.
Fayette	O. S. Nelson, Washington Court House.
Franklin	Charles W. Cookson, Columbus.
Fulton	C. D. Perry, Wauseon.
Gallia	E. W. Edwards, Gallipolis.
Geauga	Harold Ryder, Chardon.
Greene	H. C. Aultman, Xenia.
Guernsey	W. G. Wolfe, Cambridge.
Hamilton	Pliny A. Johnston, Cincinnati.
Hancock	A. J. Nowlan, Findlay.
Hardin	F. P. Allyn, Kenton.
Harrison	G. E. Roche, Cadiz.
Henry	H. D. Teal, Napoleon.
Highland	W. H. Vance, Hillsboro.
Hocking	W. C. Brasharos, Logan.
Holmes	F. H. Close, Millersburg.
Huron	O. C. Minnich, Norwalk.
Jackson	J. F. Dixon, Jackson.
Jefferson	W. I. Everson, Steubenville.
Knox	J. C. Marriott, Mount Vernon.
Lake	F. H. Kendall, Painesville.
Lawrence	C. B. Dillon, Ironton.
Licking	N. D. O. Wilson, Newark.
Logan	E. A. Bell, Bellefontaine.
Lorain	E. C. Seale, Elyria.
Lucas	J. W. Whitmer, Toledo.
Madison	L. C. Dick, London.
Mahoning	Jerome Hull, Youngstown.
Marion	W. R. Heistand, Marion.
Medina	C. B. Ulery, Medina.
Meigs	T. W. Karr, Pomeroy.
Mercer	S. Cotterman, Celina.
Miami	L. J. Bennett, Troy.
Monroe	E. C. Feiock, Woodsfield.
Montgomery	A. A. Maysilles, Dayton.
Morgan	F. A. Davis, McConnellsville.
Morrow	C. G. Leiter, Mount Gilead.
Muskingum	John S. McGinnis, Zanesville.
Noble	H. L. Bates, Caldwell.
Ottawa	A. O. Dehn, Port Clinton.
Paulding	John C. Berg, Paulding.
Perry	D. E. Riggle, New Lexington.
Pickaway	M. C. Warren, Circleville.
Pike	J. D. McKinley, Waverly.
Portage	O. E. Pore, Ravenna.
Preble	W. S. Fogarty, Eaton.
Putnam	G. J. Keinath, Ottawa.
Richland	L. C. Martin, Mansfield.
Ross	J. L. Fortney, Chillicothe
Sandusky	S. A. Harbourt, Fremont.
Sciote	Edw. McCowen, Portsmouth.
Seneca	J. E. Sherck, Tiffin.
Shelby	W. E. Partington, Sidney.
Stark	J. A. Smith, Canton.
Summit	C. A. Flickinger, Akron.
Trumbull	J. E. Boetticher, Warren.
Tuscarawas	Chas. Bartholmeh, New Philadelphia.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
OHIO—continued.	
Union	D. H. Sellers, Marysville.
Van Wert	J. A. Greulach, Van Wert.
Vinton	C. L. Williams, McArthur.
Warren	F. B. Harris, Lebanon.
Washington	M. C. Smith, Marietta.
Wayne	G. U. Baumgardner, Wooster.
Williams	W. A. Salter, Bryan.
Wood	H. E. Hall, Bowling Green.
Wyandot	James H. Grove, Upper Sandusky.
OKLAHOMA.	
Adair	Laura E. Mount, Stilwell.
Alfalfa	Charles C. Wolfe, Cherokee.
Atoka	J. B. Earle, Atoka.
Beaver	W. L. Henson, Beaver.
Beckham	D. P. Lowe, Sayre.
Blaine	Mrs. T. C. McKnight, Watonga.
Bryan	J. Lee Cunningham, Durant.
Caddo	D. M. Scism, Anadarko.
Canadian	Edith M. Layton, El Reno.
Carter	G. W. Coffman, Ardmore.
Cherokee	William Ghormley, Tahlequah.
Choctaw	J. T. Reed, Hugo.
Cimarron	George W. Gillis, Boise City.
Cleveland	W. R. Clark, Norman.
Coal	J. M. Cusenberry, Coalgate.
Comanche	J. A. Johnson, Lawton.
Cotton	W. W. Shepherd, Walter.
Craig	Mrs. Hildred Wammack, Vinita.
Creek	Helen Fitchel, Sapulpa.
Custer	Elizabeth Renick, Arapaho.
Delaware	Allie J. Smith, Jay.
Dewey	J. B. Conrad, Taloga.
Ellis	Arthur L. Walker, Arnett.
Garfield	J. C. Hoffsommer, Enid.
Garvin	Roxie Hughs, Pauls Valley.
Grady	H. F. Allen, Chickasha.
Grant	John W. Williams, Medford.
Greer	Haskell Pruett, Mangum.
Harmon	Harry C. Hicks, Hollis.
Harper	W. D. Drake, Buffalo.
Haskell	R. L. Cross, Stigler.
Hughes	V. H. Durham, Holdenville.
Jackson	H. H. Porter, Altus.
Jefferson	R. C. White, Waurika.
Johnston	Mrs. M. Rinsland, Tishomingo.
Kay	A. D. Kersey, Newkirk.
Kingfisher	Mrs. Sara Liston, Kingfisher.
Kiowa	J. B. Hendrix, Hobart.
Latimer	Florence G. Miller, Wilburton.
Le Flore	J. Arthur Skinner, Poteau.
Lincoln	O. W. Bass, Chandler.
Logan	Mrs. Cora E. Farrell, Guthrie.
Love	Martha Daves, Marietta.
McClain	Beatrice Ward, Purcell.
McCurtain	M. R. Phillips, Idabell.
McIntosh	R. J. Mullins, Eufaula.
Major	Louesa Specht, Fairview.
Marshall	J. L. Blakely, Madill.
Mayes	Carlotta Archer, Pryor.
Murray	Tom McGiboney, Sulphur.
Muskogee	H. P. Battles, Muskogee.
Noble	Mrs. A. E. Hitsman, Perry.
Nowata	E. R. Bell, Nowata.
Okfuskee	Geo. F. Durham, Okemah.
Oklahoma	Mrs. Anna Burks-Love, Oklahoma.
Okmulgee	N. O. Hopkins, Okmulgee.
Osage	John H. Porter, Pawhuska.
Ottawa	Harry C. Ballinger, Miami.
Pawnee	May Hussey, Pawnee.
Payne	Emma Bassler, Stillwater.
Pittsburg	Fannie C. Ross, McAlester.
Pontotoc	A. Floyd, Ada.
Pottawatomie	H. M. Fowler, Tecumseh.
Pushmataha	W. A. Blakeley, Antlers.
Roger Mills	W. A. Adams, Cheyenne.
Rogers	Mrs. A. K. Ross, Claremore.
Seminole	W. A. Billingsley, Wewoka.
OKLAHOMA—con.	
Sequoyah	E. V. Dawson, Sallisaw.
Stephens	J. A. Carnes, Duncan.
Texas	W. A. Martin, Guymon.
Tillman	T. O. Davis, Frederick.
Tulsa	Mrs. Minette Hedges, Tulsa.
Wagoner	Victoria Lyles, Wagoner.
Washington	Mary Richards, Bartlesville.
Washita	S. G. Thomas, Cordell.
Woods	Amanda McDaniel, Alva.
Woodward	L. B. Chandler, Woodward.
OREGON.	
Baker	Mrs. Elmetta Bailey York, Baker.
Benton	R. E. Cannon, Corvallis.
Clackamas	Brenton Vedder, Oregon City.
Clatsop	O. H. Byland, Astoria.
Columbia	J. B. Wilkerson, St. Helens.
Coos	C. E. Mulkey, Coquille.
Crook	J. E. Myers, Prineville.
Curry	W. M. Kent, Brookings.
Deschutes	J. Alton Thompsen, Bend.
Douglas	O. C. Brown, Roseburg.
Gilliam	J. C. Sturgill, Condon.
Grant	W. T. Clay, Canyon City.
Harney	Mrs. Frances Clark, Burns.
Hood River	L. B. Gibson, Hood River.
Jackson	G. W. Ager, Jacksonville.
Jefferson	Mrs. Lillian Watts, Madris.
Josephine	Mrs. Alice M. Bacon, Grants Pass.
Klamath	Twyla Head, Klamath Falls.
Lake	C. E. Oliver, Lakeview.
Lane	E. J. Moore, Eugene.
Lincoln	R. P. Goin, Toledo.
Linn	Mrs. Ida M. Cummings, Albany.
Malheur	Mrs. Fay Clark Hurley, Vale.
Marion	W. M. Smith, Salem.
Morrow	Mrs. Lena S. Shurte, Heppner.
Multnomah	W. C. Alderson, Portland.
Polk	Josiah Wills, Dallas.
Sherman	Grace L. May, Moro.
Tillamook	G. B. Lamb, Tilamook.
Umatilla	W. W. Green, Pendelton.
Union	Mrs. A. E. Ivanhoe, LaGrande.
Wallowa	J. C. Conley, Enterprise.
Wasco	A. E. Gronewald, The Dalles.
Washington	N. A. Frost, Hillsboro.
Wheeler	H. J. Simmons, Fossil.
Yamhill	S. S. Duncan, McMinnville.
PENNSYLVANIA.	
Adams	H. Milton Roth, Gettysburg.
Allegheny	Saml. Hamilton, Wilkinsburg.
Armstrong	C. M. Hellman, Kittanning.
Beaver	David C. Locke, Beaver.
Bedford	Lloyd H. Hinkle, Bedford.
Berks	E. M. Rapp, Reading.
Blair	T. S. Davis, Altoona.
Bradford	L. J. Russell, Towanda.
Bucks	J. H. Hoffman, Doylestown.
Butler	J. T. Connell, Butler.
Cambria	M. S. Bentz, Ebensburg.
Cameron	C. F. Plasterer, Emporium.
Carbon	J. J. Bevan, Mauch Chunk.
Center	D. O. Etters, State College.
Chester	Thomas A. Bock, Westchester.
Clarion	N. E. Hester, Clarion.
Clearfield	W. P. Trostle, Clearfield.
Clinton	I. N. McCloskey, Lock Haven.
Columbia	Wm. W. Evans, Bloomsburg.
Crawford	P. D. Blair, Meadville.
Cumberland	J. Kelso Green, Carlisle.
Dauphin	Frank E. Shambaugh, Lykens.
Delaware	A. G. C. Smith, Media.
Elk	J. W. Sweeney, St. Marys.
Erie	I. H. Russell, North East
Fayette	John S. Carroll, Uniontown.
Forest	J. O. Carson, Tionesta.
Franklin	L. E. Smith, Chambersburg.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.
PENNSYLVANIA—continued.	
Fulton	J. E. Thomas, McConnellsburg.
Greene	H. D. Freeland, Waynesburg.
Huntingdon	L. E. Boyer, Huntingdon.
Indiana	J. F. Chapman, Indiana.
Jefferson	C. A. Anderson, Brookville.
Juniata	C. E. Kauffman, McAllisterville.
Lackawanna	J. C. Taylor, Scranton.
Lancaster	Daniel Fleisher, Lancaster.
Lawrence	C. F. Ball, Mahoningtown, R. 8.
Lebanon	John W. Snoke, Lebanon.
Lehigh	Mervin J. Wertman, Orefield.
Luzerne	F. P. Hopper, Wilkes-Barre.
Lycoming	G. B. Milnor, Williamsport.
McKean	C. W. Lillibridge, Smethport.
Mercer	H. E. McConnell, Mercer.
Mifflin	Lawrence Ruble, McVeytown.
Monroe	Frank Koehler, Stroudsburg.
Montgomery	J. H. Landis, Norristown.
Montour	Fred W. Diehl, Danville.
PENNSYLVANIA—continued.	
Northampton	Geo. A. Grim, Nazareth.
Northumberland	I. H. Mauser, Sunbury.
Perry	D. A. Kline, New Bloomfield.
Pike	L. Westbrook, Matamoras.
Potter	A. P. Akeley, Coudersport.
Schuylkill	L. Seltzer, Pottsville.
Snyder	T. A. Stetler, Middleburg.
Somerset	John H. Fike, Somerset.
Sullivan	Harry R. Henning, Lopez.
Susquehanna	F. H. Taylor, Montrose.
Tioga	Morton F. Jones, Blossburg.
Union	Wm. W. Spigelmyer, Mifflinburg.
Venango	D. W. Armstrong, Franklin.
Warren	C. S. Knapp, Warren.
Washington	L. R. Crumrine, Washington.
Wayne	J. J. Koehler, Honesdale.
Westmoreland	Robt. C. Shaw, Greensburg.
Wyoming	J. E. Morgan, Tunkhannock.
York	C. W. Stine, York.

Division.	Division superintendent.
PHILIPPINE ISLANDS.	
Abra	F. L. Meinke (acting), Bangued.
Albay	Thomas H. Cassidy, Albay.
Antique	Gabriel R. Manalac (acting), San Jose.
Bataan	Benito Pangilinan, Balanga.
Batangas	H. M. Wagenblass, Batangas.
Bohol	Frederic J. Waters, Tagbilaran.
Bulacan	R. L. Barron, Malolos.
Cagayan	W. B. Beard, Tuguegarao.
Camarines	Walter G. M. Buckisch, Naga.
Capiz	Robert Clauson, Capiz.
Cavite	Adam C. Derkum, Cavite.
Cebu	S. J. Wright, Cebu.
Ilocos Norte	Benjamin Levin, Laoag.
Ilocos Sur	Edward J. Murphy, Vigan.
Iloilo	James C. Scott, Iloilo.
Isabela	S. C. Kelleher (acting), Ilagan.
Laguna	R. G. McLeod, Santa Cruz.
Leyte	S. Colin Campbell, Tacloban.
Manila	G. R. Summers (acting). Manila.
Mindoro	Justo Ramos (acting), Calapan.
Misamis	R. F. Rawson (acting), Cagayan.
Mountain	R. H. Worsley (acting), Baguio.
Neuva Ecija	L. P. Willis (acting), Cabanatuan.
Nueva Vizcaya	Daniel E. Clancy (acting), Bayombong.
Occidental Negros	J. A. Robbins (acting), Bacolod.
Oriental Negros	John C. Early, Dumaguete.
Palawan	C S. Crowther (acting), Cuyo.
Pampanga	R. K. Gilmore, San Fernando.
Pangasinan	A. W. Cain, Lingayen.
Rizal	C. W. Rummell (acting), Pasig.
Romblon	Q. San Buenaventura (acting), Romblon.
Samar	B. Fielden Nutter (acting), Catbalogan.
Sorsogon	G. W. Satterthwaite, Sorsogon.
Surigao	C. A. Blue (acting), Surigao.
Tarlac	Arthur G. Spiller, Tarlac.
Tayabas	Gilbert S. Perez, Lucena.
Union	Honorio Poblador, San Fernando.
Zambales	Antonio Nera (acting), Iba.
Department of Mindanao and Sulu.	
Agusan	F. P. Low (acting). Butuan.
Bukidnon	Bertram S. Ten-Hagen (acting), Malaybalay.
Cotabato	Arthur E. Harpst, Cotabato.
Davao	V. D. Gibson (acting), Davao.
PHILIPPINE ISLANDS—continued.	
Department of Mindanao and Sulu—Continued.	
Lanao	Ralph E. Spencer (acting), Camp Keithley, Lanao.
Sulu	J. W. Light, Jolo.
Zamboanga	J. J. Heffington, Zamboanga.
PORTO RICO.	
Adjuntas	Francisco R. López.
Aguadilla	
Aibonito	Francisco G. Veve.
Anasco	Pedro P. Arán.
Arecibo	Manuel G. Nin.
Arroyo	Claude S. Field.
Barros	Gumersindo C. Lopez.
Bayamon	Manuel Negron Collazo.
Cabo Rojo	William F. Littlefield.
Caguas	Cecilio T. Reyes.
Camuy	Juliet A. Casey.
Carolina	Rafael de J. Cordero.
Cayey	Alan H. Linch.
Ciales	Ramón Sandín.
Coamo	Facundo Sánchez.
Comerio	Julio Ortiz.
Corozal	Valeriano Flores y Robles.
Fajardo	S. D. W. Mills.
Guayama	Servando Rabainne.
Guayanilla	Hatuey Diaz Baldorioty.
Humacao	Santiago Veve, jr.
Isabela	Carlos Rivera Ufret.
Juana Diaz	Zoilo Gracia.
Juncos	Oscar Porrata.
Lares	Chas. P. Cassidy.
Manati	Daniel F. Lynch.
Maricao	José M. Zapata.
Mayaguez	Luis Irizarry.
Naguabo	Luis G. Casanova.
Ponce	John P. Blanco.
Rio Grande	Rafael Segarra.
Rio Piedras	Cecil E. Stevens.
Salinas	Stella Márquez Morales.
San German	H. A. Martin.
San Juan	
San Sebastian	Pedro A. Ceballero.
Toa Baja	José Vázquez Ortiz.
Utuado	Jose C. Rosario.
Vega Baja	Francisco Gaztambide.
Yabucoa	Bernardo Huyke.
Yauco	Charles E. Miner.

XI.—County and Other Local Superintendents of Schools—Continued.

Town.	Town superintendent.
RHODE ISLAND.	
Charlestown	S. Hussey Reed, Westerly.
Hopkinton	
Exeter	Rowland B. Palmer, Slocum.
Foster	E. P. Colson.
Gloucester	Clovis H. Mitchell, Greenville.
Jamestown	Walter H. Tabor, Jamestown.
Little Compton	J. Webster Coombs, Little Compton.
RHODE ISLAND—continued.	
Middletown	Joel Peckham, Aquidneck.
Narragansett	William A. Brady, Wakefield.
New Shoreham	
Richmond	Charles J. Greene, Kenyon.
West Greenwich	Joseph Rose, Escoheag.

County.	County superintendent.
SOUTH CAROLINA.	
Abbeville	W. J. Evans, Abbeville.
Aiken	H. R. Chapman, Aiken.
Allendale	J. R. Cullom, Allendale.
Anderson	G. S. Goodgion, Anderson.
Bamberg	R. W. D. Rowell, Bamberg.
Barnwell	H. J. Crouch, Barnwell.
Beaufort	W. M. Steinmeyer, Beaufort.
Berkeley	Sidney Sanders, Moncks Corner.
Calhoun	B. F. Keller, St. Matthews.
Charleston	H. H. McCarley, Charleston.
Cherokee	J. L. Walker, Gaffney.
Chester	W. D. Knox, Chester.
Chesterfield	J. A. Knight, Chesterfield.
Clarendon	E. J. Browne, Manning.
Colleton	H. S. Strickland, Walterboro.
Darlington	D. L. Lewis, Darlington.
Dillon	R. S. Rogers, Dillon.
Dorchester	J. A. Parler, St. George.
Edgefield	W. W. Fuller, Edgefield.
Fairfield	J. L. Brice, Winnsboro.
Florence	A. H. Gasque, Florence.
Georgetown	J. W. Doar, Georgetown.
Greenville	M. C. Barton, Greenville.
Greenwood	T. E. Dorn, Greenwood.
Hampton	J. W. Rouse, Hampton.
Horry	M. J. Bullock, Conway.
Jasper	S. B. Owens, Ridgeland.
Kershaw	I. J. McKenzie, Camden.
Lancaster	A. C. Rowell, Lancaster.
Laurens	R. T. Wilson, Laurens.
Lee	J. T. Munnerlyn, Bishopville.
Lexington	A. D. Martin, Lexington.
McCormick	T. J. Price, McCormick.
Marion	S. J. Wall, Marion.
Marlboro	A. L. Easterling, Bennettsville.
Newberry	C. M. Wilson, Newberry.
Oconee	Thomas A. Smith, Walhalla.
Orangeburg	L. W. Livingston, Orangeburg.
Pickens	R. T. Hallum, Pickens.
Richland	O. D. Seay, Columbia.
Saluda	F. O. Black, Saluda.
Spartanburg	J. B. Lancaster, Spartanburg.
Sumter	J. H. Haynesworth, Sumter.
Union	F. M. Ellerbe, Union.
Williamsburg	J. G. McCullough, Kingstree.
York	J. E. Carroll, York.
SOUTH DAKOTA.	
Aurora	Elva Howey, Plankinton.
Beadle	Nellie M. Brusso, Huron.
Bennett	Clara Parlasca, Martin.
Bon Homme	J. W. Whiting, Tyndall.
Brookings	Mabel K. Troolen, Castlewood.
Brown	Lucile J. Trott, Aberdeen.
Brule	Bonnie Martin, Chamberlain.
Buffalo	Clara Stroud, Gann Valley.
Butte	Mae Scotney, Bellefourche.
Campbell	W. A. Bentley, Mound City.
Charles Mix	Cora E. Stone, Lake Andes.
Clark	Katie Sprague, Clark.
Clay	Nora Silkenson, Vermilion.
Codington	Adah Minard, Watertown.
SOUTH DAKOTA—continued.	
Corson	Frances Delaney, McIntosh.
Custer	Ethel Montgomery, Custer.
Davison	Emma McClintock, Mitchell.
Day	Clara N. Hanson, Webster.
Deuel	A. W. Munson, Clear Lake.
Dewey	Elenor McVey, Timber Lake.
Douglas	Adella Hilton, Armour.
Edmunds	Janette W. Lewis, Ipswich.
Fall River	Irene E. Ferguson, Hot Springs.
Faulk	Marjory Warner, Faulkton.
Grant	Nettie S. Johnson, Milbank.
Gregory	Mary E. Ward, Bonesteel.
Haakon	Nina Duryea, Philip.
Hamlin	Esther M. Shaver, Hayti.
Hand	Addie Welch, St. Lawrence.
Hanson	Julia A. Bloom, Alexandria.
Harding	Eudora V. Stegner, Harding.
Hughes	Daisy Solberg, Pierre.
Hutchinson	Benj. Kaufmann, Freeman.
Hyde	Pauline D. Gray, Highmore.
Jackson	L. S. Du Bois, Kadoka.
Jerauld	R. H. Crerar, Lane.
Jones	L. M. Powers, Murdo.
Kingsbury	Mrs. M. S. McCarty, De Smet.
Lake	June Emry, Madison.
Lawrence	Kathryn Ayer, Deadwood.
Lincoln	Maylou Rogers, Fairview.
Lyman	Ben Bower, Oacoma.
McCook	Laura Bouchie, Salem.
McPherson	W. K. Bishop, Leola.
Marshall	Catherine Morris, Langford.
Meade	Vina Weaklen, Sturgis.
Mellette	V. R. Branson, Wood.
Miner	Margaret Anderson, Howard.
Minnehaha	Alma Langhout, Sioux Falls.
Moody	Alice Coonrod, Flandreau.
Pennington	Adella S. Beach, Rapid City.
Perkins	A. A. Hale, Bison.
Potter	Helen Wickersham, Gettysburg.
Roberts	Pearl F. Robinson, Sisseton.
Sanborn	Sada C. Post, Woonsocket.
Shannon	Mrs. J. M. Blish, Pine Ridge.
Spink	Lutie B. Cunningham, Redfield.
Stanley	Roberta Smith, Fort Pierre.
Sully	Jesse T. Hayes, Onida.
Todd	Sadie W. Hickey, Sioux Falls.
Tripp	Maude Henderson, Winner.
Turner	Nellie I. Appleby, Parker.
Union	Clara Hayes, Elk Point.
Walworth	C. H. Meadors, Selby.
Washabaugh	J. M. Woods, Wanblee.
Yankton	Geo. A. Clark, Yankton.
Ziebach	Hortense M. Bagley. Dupree.
TENNESSEE.	
Anderson	W. H. Miller, Clinton.
Bedford	Louis Wilhoite, Shelbyville.
Benton	E. J. Clement, Camden.
Bledsoe	Mrs. C. O. Chism, Pikeville.
Blount	J. H. Miser, Maryville.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.
TENNESSEE—con.	
Bradley	E. J. Frazier, Cleveland.
Campbell	Henry C. Irwin, La Follette.
Cannon	W. H. Finley, Woodbury.
Carroll	D. T. Barnhill, Huntingdon.
Carter	J. R. Ritchie, Elizabethton.
Cheatham	P. H. Duke, Ashland City.
Chester	J. W. Stewart, Henderson.
Claiborne	J. W. Baldwin, New Tazewell.
Clay	R. C. Ledbetter, Willow Grove.
Cocke	Roy T. Campbell, Newport.
Coffee	J. H. Leming, Manchester.
Crockett	C. P. Roland, Maury City.
Cumberland	A. G. Albertson, Crossville.
Davidson	W. C. Anderson, Nashville.
Decatur	Geo. L. Wortham, Decaturville.
Dekalb	L. L. McDowell, Smithville.
Dickson	R. E. Corlew, Charlotte.
Dyer	R. M. Grills, Dyersburg.
Fayette	W. T. Loggins, Somerville.
Fentress	W. R. Storie, Jamestown.
Franklin	W. J. Arnold, Winchester.
Gibson	F. L. Browning, Trenton.
Giles	B. H. Gaultney, Pulaski.
Grainger	H. G. Farmer, Rutledge.
Greene	Joel N. Pierce, Greeneville.
Grundy	J. L. Rollins, Altamont.
Hamblen	J. D. Self, Morristown.
Hamilton	J. A. Roberts, Chattanooga.
Hancock	L. J. Catron, Sneedville.
Hardeman	M. L. Hardin, Bolivar.
Hardin	J. C. Smith, Saltillo.
Hawkins	Roy Myers, Rogersville.
Haywood	F. R. Ogilvie, Brownsville.
Henderson	J. O. Brown, Lexington.
Henry	Joe Routon, Paris.
Hickman	Herman Pratt, Centreville.
Houston	D. J. McAulay, Erin.
Humphreys	W. H. Knight, Waverly.
Jackson	W. L. Dixon, Gainesboro.
Jefferson	Roy R. Bales, Dandridge.
Johnson	F. C. Dougherty, Mountain City.
Knox	W. L. Stooksbury, Knoxville.
Lake	Thurman McCain, Tiptonville.
Lauderdale	G. G. McLeod, Ripley.
Lawrence	Virgil G. Holt, Lawrenceburg.
Lewis	Mrs. H. T. Poore, Hohenwald.
Lincoln	Jesse Hardin, Fayetteville.
Loudon	J. T. Henderson, Loudon.
McMinn	Austin Hanks, Athens.
McNairy	Terry Abernathy, Selmer.
Macon	W. H. Cook, Lafayette.
Madison	W. A. Malone, Jackson.
Marion	D. A. Tate, South Pittsburg.
Marshall	J. G. Stinson, Lewisburg.
Maury	Jno. P. Graham, Culleoka.
Meigs	John H. Arrants, Decatur.
Monroe	A. C. Watson, Madisonville.
Montgomery	A. W. Jobe, Clarksville.
Moore	L. H. Wiseman, Lynchburg.
Morgan	A. B. Peters, Wartburg.
Obion	B. A. Vaughn, Union City.
Overton	Geo. O. Lea, Livingston.
Perry	L. G. Bunch, Linden.
Pickett	W. J. Babb, Byrdstown.
Polk	J. L. Brewer, Benton.
Putnam	J. M. Hatfield, Cookeville.
Rhea	Walter White, Dayton.
Roane	J. W. Carter, Kingston.
Robertson	Wm. McNeeley, Springfield.
Rutherford	W. N. Elrod, Murfreesboro.
Scott	W. J. Jeffers, Huntsville.
Sequatchie	W. V. Freiley, Dunlap.
Sevier	A. O. De Lozier, Sevierville.
Shelby	Miss Charl Williams, Memphis.
Smith	Lee Huffines, Carthage.
TENNESSEE—con.	
Stewart	W. C. Howell, Dover.
Sullivan	J. C. Akard, Blountville.
Sumner	T. W. Hunter, Gallatin.
Tipton	Eugene Younger, Covington.
Trousdale	T. B. Woodmore, Hartsville.
Unicoi	Mrs. Lizzie Roberts, Erwin.
Union	V. W. Palmer, Sharps Chapel.
Van Buren	H. E. Scott, Spencer.
Warren	J. B. Clark, McMinnville.
Washington	J. C. Berry, Jonesboro.
Wayne	Jno. W. Gallien, Waynesboro.
Weakley	F. Y. Fuqua, Dresden.
White	W. E. Shockley, Sparta.
Williamson	Fred J. Page, Franklin.
Wilson	G. W. Alexander, Lebanon.
TEXAS.	
Anderson	E. F. Rollins, Palestine.
Andrews	A. N. Brown, Andrews.
Angelina	J. O. Satterwhite, Lufkin.
Aransas	F. Stevens, Rockport.
Archer	George W. Alexander, Archer City.
Armstrong	H. L. Mobley, Claude.
Atascosa	H. D. Rhode, Jourdanton.
Austin	O. M. Brown, jr., Bellville.
Bailey	W. M. Wilterding, Dimmitt.
Bandera	Sam O'Bryant, Bandera.
Bastrop	T. N. Powell, Bastrop.
Baylor	Nat G. Mitchell, Seymour.
Bee	Patti Reagan, Beeville.
Bell	P. L. Stone, Belton.
Bexar	P. F. Stewart, San Antonio.
Blanco	Wm. Martiny, Johnson City.
Borden	Thos. G. Patteson, Gail.
Bosque	H. C. Powell, Meridian.
Bowie	C. A. Bonham, Boston.
Brazoria	J. H. De Fee, Angleton.
Brazos	W. L. Powers, Bryan.
Brewster	A. M. Turney, Alpine.
Briscoe	L. B. Richards, Silverton.
Brooks	J. A. Brooks, Falfurrias.
Brown	Carrie Reaves, Brownwood.
Burleson	Lee Hensley, Caldwell.
Burnet	J. R. Smith, Burnet.
Caldwell	Leona Dodd, Lockhart.
Calhoun	R. H. Hamilton, Port Lavaca.
Callahan	S. E. Settle, Baird.
Cameron	W. F. Jourdan, Brownsville.
Camp	W. N. Tucker, Pittsburg.
Carson	J. A. Whiteside, Panhandle.
Cass	J. B. McClung, Atlanta.
Castro	B. D. Woodlee, Dimmitt.
Chambers	J. F. Wilson, Anahuac.
Cherokee	W. B. Thompson, Rusk.
Childress	J. B. Foster, Childress.
Clay	Hugh Moore, Henrietta.
Cochran	J. H. Moore, Lubbock.
Coke	D. I. Durham, Robert Lee.
Coleman	J. C. Griffen, Coleman.
Collin	W. S. Smith, McKinney.
Collingsworth	C. C. Small, Wellington.
Colorado	Blanche Baar, Columbus.
Comal	Adolph Stein, New Braunsfels.
Comanche	Mrs. J. E. Deely, Comanche.
Concho	Jas E. Howze, Paint Rock.
Cooke	F. J. Clement, Gainesville.
Coryell	H. T. Hall, Gatesville.
Cottle	J. W. McCrary, jr., Paducah.
Crockett	C. E. Davidson, Ozona.
Crosby	B. H. Howard, Crosbyton.
Culberson	J. C. Hunter, Van Horn.
Dallam	Lawrence Ashby, Dalhart.
Dallas	B. M. Hudspeth, Dallas.
Dawson	J. R. Lowrie, Lamesa.
Deaf Smith	J. A. Hughes, Hereford.
Delta	W. B. Wheeler, Cooper.
Denton	L. H. Edwards, Denton.
De Witt	L. G. Covey, Cuero.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
TEXAS—contd.	
Dickens	Walter L. Powell, Dickens.
Dimmit	A. Wildenthal, Carriezo Springs.
Donley	W. T. Link, Clarendon.
Duval	J. F. Clarkson, San Diego.
Eastland	Ulala, Howard, Eastland.
Ector	E. V. Graham, Odessa.
Edwards	A. P. Allison, Rock Springs.
Ellis	John F. Olsen, Waxahachie.
El Paso	Myra Winkler, El Paso,
Erath	Mary Marrs, Stephenville..
Falls	Lucile Rogers, Marlin.
Fannin	F. A. Spencer, Bonham.
Fayette	G. A. Stierling, La Grange.
Fisher	Mrs. A. J. Hughes, Roby.
Floyd	J. W. Howard, Floydada.
Foard	G. L. Burk, Crowell.
Fort Bend	Mimmie M. Mayes, Richmond.
Franklin	W. R. Irby, Mount Vernon.
Freestone	E. J. Hood, Fairfield.
Frio	A. J. Cook, Pearsall.
Gaines	T. O. Start, Seminole.
Galveston	T. B. Blackstone, Galveston.
Garza	H. G. Smith, Post.
Gillespie	A. H. Kneese, Fredericksburg.
Glasscock	J. O. Bigby, Garden City.
Goliad	Mrs. Bessie B. Haydon, Goliad.
Gonzales	J. C. Cochran, Gonzales.
Gray	T. M. Wolfe, Lefors.
Grayson	George W. Acton, Sherman.
Gregg	S. L. Wilson, Longview.
Grimes	Lizzie Grissett, Anderson.
Guadalupe	J. F. Saegert, Seguin.
Hale	Charles Clements, Plainview.
Hall	M. E. McNaly, Memphis.
Hamilton	A. T. Jones, Hamilton.
Hansford	A. E. Townsend, Hansford.
Hardeman	L. M. Davis, Quanah.
Hardin	R. P. Gibbs, Kountze.
Harris	W. G. Smiley, Houston.
Harrison	C. W. LaGrone, Marshall.
Hartley	J. H. Phillips, Channing.
Haskell	Mrs. Ed. Robertson, Haskell.
Hays	Mrs. C. E. Rugel, San Marcos.
Hemphill	W. D. Fisher, Canadian.
Henderson	W. R. Thomas, Athens.
Hidalgo	J. S. Bunn, Edinburg.
Hill	Frank Van Winkle, Hillsboro.
Hockley	J. H. Moore, Lubbock.
Hood	George Tarrant, Granbury.
Hopkins	Dan J. Thompson, Sulphur Springs.
Houston	J. H. Rosser, Crockett.
Howard	S. A. Penix, Big Springs.
Hudspeth	P. A. Hazzard, Sierra Blanca.
Hunt	E. P. Thomas, Greenville.
Hutchinson	M. G. Mathis, Plemons.
Irion	W. F. Fokes, Sherwood.
Jack	J. W. Fulcher, Jacksboro.
Jackson	E. L. Blair, Edna.
Jasper	T. E. McDonald, Jasper.
Jeff Davis	J. W. Merrill, Fort Davis.
Jefferson	Mary Sandell, Beaumont.
Jim Hogg	A. M. Brumfield, Hebbronville.
Jim Wells	Lela Du Bose, Alice.
Johnson	Angie Gatewood, Cleburne.
Jones	F. A. Pope, Anson.
Karnes	L. P. Lightsey, Karnes City.
Kaufman	Florence Conner, Kaufman.
Kendall	J. A. Philip, Boerne.
Kent	B. P. Vardiman, Clairemont.
Kerr	Lee Wallace, Kerrville.
Kimble	C. R. Stevenson, Junction City.
King	A. C. Tackett, Guthrie.
Kinney	Ben S. Jones, Brackettville.
Kleburg	Ben. F. Wilson, Kingsville.
Knox	J. M. Morgan, Benjamin.
Lamar	J. A. Fulks, Paris.
Lamb	W. G. Street, Olton.
Lampasas	W. H. Adkins, Lampasas.
La Salle	G. A. Welhausen, Cotulla.
Lavaca	Frank Schoppe, Hallettsville.
Lee	E. McIntosh, Giddings.
Leon	W. R. Moore, Centerville.
Liberty	W. C. Crawley, Liberty.
Limestone	T. L. Pritchard, Groesbeck.
Lipscomb	B. E. Shutterly, Lipscomb.
Live Oak	T. H. Miller, Oakville.
Llano	A. E. Moore, Llano.
Loving	James F. Ross, Pecos.
Lubbock	J. H. Moore, Lubbock.
Lynn	C. H. Cain, Tahoka.
McCulloch	W. M. Deans, Brady.
McLennan	R. L. Abbott, Waco.
McMullen	D. B. Martin, Tilden.
Madison	J. T. Conn, Madisonville.
Marion	Alice Emmert, Jefferson.
Martin	J. H. Watson, Stanton.
Mason	C. H. Garret, Mason.
Matagorda	W. F. Pack, Bay City.
Maverick	W. A. Bonnet, Eagle Pass.
Medina	W. N. Saathoff, Hondo.
Menard	J. D. Scruggs, Menard.
Midland	J. M. De Armond, Midland.
Milam	J. F. Chadwick, Cameron.
Mills	R. B. Weaver, Goldthwaite.
Mitchell	J. C. Hall, Colorado.
Montague	I. B. Williams, Montague.
Montgomery	Mrs. Bessie Meredith, Conroe.
Moore	L. W. Wall, Dumas.
Morris	G. E. Shive, Daingerfield.
Motley	S. W. Rhodes, Matador.
Nacogdoches	G. B. Layton, Nacogdoches.
Navarro	Albert J. Davis, Corsicana.
Newton	R. J. Good, Newton.
Nolan	Minnie Fowler, Sweetwater.
Nueces	Nat Benton, Corpus Christi.
Ochiltree	J. W. Payne, Perryton.
Oldham	Wm. Balfour, Vega.
Orange	Allie Bland, Orange.
Palo Pinto	E. L. Pitts, Palo Pinto.
Panola	R. E. Carswell, Carthage.
Parker	V. P. Cravan, Weatherford.
Parmer	James D. Hamlin, Farwell.
Pecos	Howell Johnson, Fort Stockton.
Polk	W. J. Tullas, Leggett.
Potter	R. C. Johnson, Amarillo.
Presidio	Allie R. Brown, Marfa.
Rains	H. D. Garrett, Emory.
Randall	C. R. Flesher, Canyon.
Reagan	W. W. Pittman, Stiles.
Real	Ed. A. Kelly, Leakey.
Red River	Mrs. Mollie Stephens, Clarksville.
Reeves	Jas. F. Ross, Pecos.
Refugio	J. T. Vance, Refugio.
Roberts	J. E. McKenzie, Miami.
Robertson	Clara Story, Franklin.
Rockwall	J. K. Wells, Rockwall.
Runnels	J. J. Bugg, Ballinger.
Rusk	G. C. Padgett, Henderson.
Sabine	Jno. Harper, Hemphill.
San Augustine	W. E. Mathews, San Augustine.
San Jacinto	H. S. Lilly, Cold Springs.
San Patricio	Mrs. Susan Sipes, Sinton.
San Saba	W. N. Ellis, San Saba.
Schleicher	C. A. Womack, Eldorado.
Scurry	O. L. Howell, Snyder.
Shackelford	Richard Dyess, Albany.
Shelby	W. M. Chandler, Center.
Sherman	J. P. Reeder, Stratford.
Smith	E. J. Burns, Tyler.
Somervell	R. L. Bryan, Glen Rose.
Starr	Sam P. Vale, Rio Grande City.
Stephens	J. N. Darden, Breckenridge.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
TEXAS—contd.	
Sterling	E. P. Moss, Sterling City.
Stonewall	M. Sadie Abbott, Aspermont.
Sutton	W. E. Hodges, Sonora.
Swisher	W. S. Tomlinson, Tulia.
Tarrant	B. Carroll, Fort Worth.
Taylor	C. E. Sims, Abilene.
Terrell	G. J. Henshaw, Sanderson.
Terry	W. W. Price, Brownfield.
Throckmorton	B. F. Reynolds, Throckmorton.
Titus	P. H. Rogers, Mount Pleasant.
Tom Green	J. H. Armstrong, San Angelo.
Travis	Leon Halden, Austin.
Trinity	J. C. Ingram, Groveton.
Tyler	G. E. Neel, Woodville.
Upshur	B. B. Elder, Gilmer.
Upton	H. B. Griffith, Rankin.
Uvalde	Mamie Anthon, Uvalde.
Valverde	Josephine Jones, Del Rio.
Van Zandt	B. E. Youngblood, Canton.
Victoria	G. M. Crutsinger, Victoria.
Walker	J. C. Thomas, Huntsville.
Waller	Alice Cameron, Hempstead.
Ward	George H. Tucker, Barstow.
Washington	Wm. Boemer, Brenham.
Webb	B. Richardson, Laredo.
Wharton	Elizabeth McIver, Wharton.
Wheeler	L. D. Miller, Wheeler.
Wichita	E. C. Hall, Wichita Falls.
Wilbarger	J. N. Fulcher, Vernon.
Willacy	J. S. Thornham, Sarita.
Williamson	Mary S. Sanders, Georgetown.
Wilson	J. E. Swift, Floresville.
Winkler	S. M. Hally, Kermit.
Wise	B. F. Roe, Decatur.
Wood	J. R. Clark, Quitman.
Yoakum	R. P. Moreland, Plains.
Young	Etna Wilkinson, Graham.
Zapata	A. P. Spohn, Zapata.
Zavala	N. H. Hunt, Batesville.

County.	County superintendent.
UTAH.	
Beaver	Sarah Keener, Beaver.
Boxelder	C. H. Skidmore, Brigham.
Cache	R. V. Larson, Logan.
Carbon	D. C. Woodward, jr., Price.
Daggett	Paul C. Miner, Manila.
Davis	H. C. Burton, Farmington.
Duchesne	James H. Moore, Duchesne.
Emery	J. A. Washburn, Hungtington.
Garfield	F. G. Gardiner, Panguitch.
Grand	D. S. L. McCorkle, Moab.
Iron	H. Claude Lewis, Cedar City.
Juab:	
Juab dist	Ray Stewart, Nephi.
Tintic dist	I. L. Williamson, Eureka.
Kane	Paul E. Nelson, Kanab.
Millard	Alonzo Huntsman, Fillmore.
Morgan	Wm. Abplanalp, Morgan.
Piute	D. H. Robinson, Junction.
Rich	G. N. Weston, Laketown.
Salt Lake:	
Granite dist	D. W. Parratt, Salt Lake City.
Jordan dist	D. C. Jensen, Sandy, R. F. D. 2.
Sampete:	
North dist	J. W. Anderson, Mt. Pleasant.
South dist	E. T. Reid, Manti.
San Juan	Parley, Woolsey, Blanding.
Sevier	A. J. Ashman, Richfield.
Summit:	
North dist	David H. Fowler, Coalville.
South dist	John F. Oleson, Kamas.
Tooele	E. M. Reid, Tooele.
Uintah	Heber S. Olson, Vernal.
Utah:	
Alpine dist	J. H. Walker, American Fork.
Nebo dist	L. J. Nuttall, jr., Spanish Fork.
Wasatch	D. A. Broadbent, Heber City.
Washington	W. O. Bentley, jr., St. George.
Wayne	Joseph Hickman, Loa.
Weber	B. A. Fowler, Ogden.

Supervision district.	District superintendent.
VERMONT.[4]	
Addison County:	
Northwest district. Addison, Ferrisburg, Monkton, Panton, Vergennes, Waltham.	W. L. Coggins.
Northeast district. Bristol, Starksboro, Lincoln, New Haven.	W. A. Beebe, Bristol.
Central district. Cornwall, Middlebury T., Middlebury I., Ripton, Weybridge, Salisbury.	Arthur W. Eddy, Middlebury.
Southwest district. Shoreham, Bridport, Orwell, Benson.	E. L. Clark, Orwell.

Supervision district.	District superintendent.
VERMONT—contd.	
Bennington County:	
North district. Dorset, Rupert, Pawlet.	R. R. Morrow, W. Pawlet.
Central district Arlington, Sunderland, Manchester, Sandgate.	B. P. Hamlin, Manchester.
Southwest district. Bennington T., Glastonbury, North Pownal, North Bennington, Pownal, Shaftsbury, Woodford.	A. W. Varney, Bennington.
Caledonia County:	
North district. West Burke I., Burke T., Sutton, Newark, East Haven.	Garfield A. Jemieson, West Burke.

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[4] For other superintendents of Vermont see p. 81.

XI.—County and Other Local Superintendents of Schools—Continued.

Supervision district.	District superintendent.
VERMONT—con.	
Caledonia County—Continued.	
North Central district. Lyndonville I., Lyndon I., Lyndon T., Kirby, Sheffield, Wheelock.	Martin E. Daniels, Lyndonville.
South Central district. Barnet, Peacham, Walden, Waterford, Danville.	Harvey Burbank, Danville.
South district. Wells River I., Newbury, Groton, Ryegate.	Leonard D. Smith, Wells River.
Chittenden County:	
East district. Richmond, Jericho, Underhill I., Underhill T., Bolton.	Horatio S. Read, Richmond.
Central district. Essex Junction I., Essex T., Williston, Winooski I., Colchester.	Minnie E. Hays, Essex Junction.
South district. Shelburne, Charlotte, South Burlington, St. George, Huntington, Hinesburg.	Burnham A Colby, Shelburne.
Essex County:	
North district. Canaan, Brighton, Norton, Lemington, Bloomfield, Brunswick.	B. E. Stover, North Stratford, N. H.
South district. Lunenburg, Concord, Victory, Granby, Guildhall, Maidstone.	S. C. Harding, Concord.
Franklin County:	
Northwest district. Swanton, Highgate, St. Albans T., Georgia, Milton T., Milton I., Westford.	Homer E. Hunt, Swanton.
Central district. Enosburg Falls I., Enosburg T., Franklin, Sheldon.	Frederick W. Wallace, Enosburg Falls.
Northeast district. Richford, Berkshire, Montgomery.	Edwin F. Greene, Richford.
VERMONT—con.	
Franklin County—Continued.	
Southeast district. Bakersfield, Fairfield, Fletcher.	Erle R. Holmes, East Fairfield.
Fairfax district. Fairfax.	E. W. Middleton, Fairfax.
Grand Isle County:	
Grand Isle district. Alburg, Isla La Motte, North Hero, South Hero, Grand Isle.	Fred E. Cargill, Alburg.
Lamoille:	
East district. Hyde Park, Eden, Wolcott.	Harold P. Crosby, Hyde Park.
South district. Morristown, Stowe, Elmore.	Carlton D. Howe, Morrisville.
West district. Cambridge, Johnson, Waterville, Belvidere.	Charles W. Edmands, Johnson.
Orange County:	
East district. Bradford, Fairlee, Vershire, Corinth, Cookville I., Topsham.	Harry P. Lynch, Bradford.
Northwest district. Chelsea, Williamstown, Washington, Orange.	
Southwest district. Randolph I., Randolph T., Brookfield, Braintree.	Geo. W. Patterson, Randolph.
Southeast district. Thetford, West Fairlee, Strafford, Norwich, Sharon.	Merle H. Willis, South Strafford.
Orleans County:	
North district. North Troy, Troy, Jay, Westfield, Lowell, Coventry, Irasburg, Newport, Newport Ctr.	O. L. Dugan, Newport Ctr.
East district. Charleston, Holland, Morgan, Brownington, Westmore.	Edwin S. Boyd, West Charleston.
Central district. Barton I., Orleans I., Barton T., Glover, Albany.	Clayton L. Erwin, Barton.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

Supervision district.	District superintendent.
VERMONT—con.	
Orleans County—Continued.	
South district.. Hardwick I., Hardwick T., Stannard, Craftsbury, Greensboro.	Clarence L. Cowles, Craftsbury.
Rutland County:	
North district.. Brandon I., Brandon T., Hubbardton, Sudbury, Whiting, Leicester, Goshen, Chittenden, Pittsford.	M. A. Sturtevant, Brandon.
Central district. Castleton, West Rutland, Ira, Fair Haven T., West Haven, Rutland T.	Philip R. Leavenworth, Castleton.
West district... Poultney, Fair Haven I., Wells, Middletown Springs.	Willis H. Hosmer, Fair Haven.
Southwest district. Wallingford, Mendon, Clarendon, Tinmouth, Danby, Mt. Tabor.	E. L. Eddy, Wallingford.
Washington County:	
Northeast district. Cabot, Calais, Woodbury, Marshfield.	Carl J. Batchelder, Cabot.
Central district. East Montpelier, Plainfield, Worcester, Middlesex, Moretown.	Walter B. Lance, Plainfield.
South district.. Northfield I., Northfield T., Roxbury, Berlin.	Charles P. McKnight, Northfield.
West district:.. Waterbury, Duxbury, Fayston, Warren, Waitsfield.	M. W. Chaffee, Waterbury.
Barre Town district. Barre Town.	Waldo Glover, South Barre.
Windham County:	
Northwest district. Londonderry, Weston, Winhall, Peru, Landgrove, Jamaica, Windham.	A. D. Wiggin, South Londonderry.
VERMONT—con.	
Windham County—Continued.	
Central district. Newfane, Townshend, Dover, Wardsboro, Grafton, Athens, Brookline, Stratton, Marlboro.	C. H. Straitiff, Townshend.
Southeast district. Dummerston, Guilford, Halifax, Putney, Vernon.	Ethel A. Eddy, Brattleboro.
Southwest district. Wilmington, Whittingham, Readsboro, Stamford, Somerset, Searsburg.	Frank E. Sawyer, Wilmington.
Windsor County:	
North district.. Bethel I., Bethel T., Royalton, Tunbridge.	V. K. Brackett, South Royalton.
Central district. Woodstock, Bridgewater, Barnard, Pomfret.	Evelyn L. Fuller, Woodstock.
East district... Hartland, West Windsor, Reading.	
South district.. Chester, Weathersfield, Cavendish, Duttonsville I., Baltimore, Andover.	Percy H. Blake, Chester.
West district... Ludlow, Plymouth, Mt. Holly, Shrewsbury.	Geo. B. Whitney, Ludlow.
Northwest district. Rochester I., Rochester T., Hancock, Granville, Pittsfield, Sherburne, Stockbridge.	Samuel H. Erskine, Rochester.
Windsor district. Windsor.	E. K. Boak, Windsor.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
VIRGINIA.	
Accomac	G. G. Joynes, Onancock.
Albemarle	A. L. Bennett, Charlottesville.
Alexandria	Fletcher Kemp, Rosslyn.
Alleghany	J. G. Jeter, Covington.
Amelia	W. R. Wrigglesworth, Blackstone.
Amherst	C. L. Scott, Amherst.
Appomatox	N. R. Featherston, Vera.
Augusta	F. M. Somerville, Staunton, R. F. D. 6.
Bath	Bruce R. Richardson, Hot Springs.
Bedford	C. M. Abbot, Bellevue.
Bland	Frank L. Dunn, Bland.
Botetourt	E. A. Painter, Fincastle.
Brunswick	R. Lee Chambliss, Rawlings.
Buchanan	M. L. Combs, Grundy.
Buckingham	John A. Twyman, Wingina, R. F. D.
Campbell	W. L. Garbee, Lawyers.
Caroline	John Washington, Milford.
Carroll	J. Lee Cox, Woodlawn.
Charles City	Herman L. Harris, Toano.
Charlotte	E. H. Hall, Drakes Branch.
Chesterfield	Philip M. Tyler, Chester.
Clarke	L. D. Cline, Winchester.
Craig	F. H. Huffman.
Culpeper	T. W. Hendricks, Culpeper.
Cumberland	J. E. Rowe, Hadensville.
Dickenson	M. W. Remines, Clintwood.
Dinwiddie	G. B. Zehmer, Dinwiddie.
Elizabeth City	John M. Willis, Hampton.
Essex	W. J. Rennolds, Center Cross.
Fairfax	M. D. Hall, Burke.
Fauquier	F. O. Smith, Warrenton.
Floyd	Isaac L. Epperly, Floyd.
Fluvanna	T. H. Shepherd, Wilmington.
Franklin	R. A. Prillaman, Rocky Mount.
Frederick	(See Clarke.)
Giles	R. H. Farrier, Newport.
Gloucester	R. A. Folkes, Gloucester.
Goochland	(See Cumberland.)
Grayson	Kyle T. Cox, Independence.
Greene	J. N. Miller, Haywood.
Greensville	Henry Maclin, North Emporia.
Halifax	H. J. Watkins, South Boston.
Hanover	J. Walton Hall, Ashland.
Henrico	A. C. Cooper, Richmond, Henrico Court House.
Henry	W. B. Gates, Martinsville.
Highland	R. E. Mauzy, Hightown.
Isle of Wight	Gavin Rawls, Carrsville.
James City	(See Charles City.)
King and Queen	(See Essex.)
King George	T. B. Baker, Welcome.
King William	H. Ragland Eubank, Etna Mills.
Lancastes	Frank W. Lewis, Morattico.
Lee	W. A. Wygal, Jonesville.
Loudoun	O. L. Emerick, Purcellville.
Louisa	Frank T. West, Louisa.
Lunenburg	A. B. Wilson, Victoria.
Madison	(See Greene.)
Mathews	G. G. Anderton, Saluda.
Mecklenburg	C. B. Green, Boydton.
Middlesex	(See Mathews.)
Montgomery	J. B. Lucas, Blacksburg.
Nansemond	R. Moore Williams, Driver.
Nelson	W. E. Kidd, Lovingston.
New Kent	(See Charles City.)
Norfolk	James Hurst, Norfolk.
Northampton	E. G. Tankard, Nassawadox.
Northumberland	(See Lancaster.)
Nottoway	(See Amelia.)
Orange	C. P. Cowherd, Gordonsville.
Page	John H. Booton, Luray.
Patrick	J. Fay Reynolds, Stuart.
Pittsylvania	O. P. Ramsey, Chatham.
Powhatan	J. W. Reynolds, Powhatan.
Prince Edward	T. J. McIlwaine, Hampden-Sidney.
VIRGINIA—contd.	
Prince George	A. B. Bristow, Hopewell.
Princess Anne	O. B. Mears, Norfolk, R. F. D. 2.
Prince William	Chas. R. McDonald, Gainesville.
Pulaski	E. L. Darst, Dublin.
Rappahannock	H. D. Hite, Front Royal.
Richmond	Blake T. Newton, Hague.
Roanoke	R. E. Cook, Salem.
Rockbridge	E. K. Paxton, Lexington.
Rockingham	J. C. Myers, Harrisonburg.
Russell	R. N. Anderson, Lebanon.
Scott	W. D. Smith, Gate City.
Shenandoah	C. V. Shoemaker, Woodstock.
Smyth	B. E. Copenhaver, Marion.
Southampton	Robert M. Newton, Franklin.
Spotsylvania	J. H. Chiles, Fredericksburg.
Stafford	W. D. Peyton, Fredericksburg, R. F. D. 2.
Surry	L. N. Savedge, Alliance.
Sussex	(See Prince George.)
Tazewell	A. S. Greever, Tazewell.
Warren	(See Rappahannock.)
Warwick	A. J. Renforth, Yorktown.
Washington	W. J. Edmondson, Lodi.
Westmoreland	(See Richmond.)
Wise	J. J. Kelly, jr., Wise.
Wythe	J. A. C. Hurt, Wytheville.
York	(See Warwick.)
WASHINGTON.	
Adams	Olive M. Hoffhine, Ritzville.
Asotin	Mrs. Viola Likes, Asotin.
Benton	Mrs. Lowa M. Crawford, Prosser.
Chelan	J. Frank Casebeer, Wenatchee.
Clallam	Ina M. McNutt, Port Angeles.
Clarke	Chester F. Bennett, Vancouver.
Columbia	W. W. Hendron, Dayton.
Cowlitz	Joseph Gardner, Kalama.
Douglas	Mrs. L. O. Anderson, Waterville.
Ferry	E. D. Hougland, Republic.
Franklin	Edith K. Peck, Pasco
Garfield	Frances J. Gimlin, Pomeroy.
Grant	J. Elmer Bovey, Ephrata.
Grays Harbor	T. W. Bibb, Montesano.
Island	Frand D. Newberry, Coupeville.
Jefferson	Elva S. Edwards, Port Townsend.
King	A. S. Burrows, Seattle.
Kitsap	Geo. T. Crockett, Port Orchard.
Kittitas	S. A. Bartlett, Ellensburg.
Klickitat	C. M. Ryman, Goldendale.
Lewis	Z. May Meighen, Chehalis.
Lincoln	W. S. Shelton, Davenport.
Mason	Mrs. Mary M. Knight, Shelton.
Okanogan	M. Brinkerhoff, Okanogan.
Pacific	Edith Soper, South Bend.
Pend Oreille	Mrs. Mamie Johnson, Newport.
Pierce	Mrs. Minnie D. Bean, Takoma.
San Juan	Carrie M. Busby, Friday Harbor.
Skagit	Mabel Graham, Mount Vernon.
Skamania	W. E. Miller, Stevenson.
Snohomish	W. F. Martin, Everett.
Spokane	F. V. Yeager, Spokane.
Stevens	W. O. Cummings, Colville.
Thurston	Mrs. Cassandra M. Brown, Olympia.
Wahkiakum	Mrs. Maud K. Butler, Cathlamet.
Walla Walla	Mary Gilliam, Walla Walla.
Whatcom	Mrs. Jennie M. Robin, Bellingham.
Whitman	S. F. Shinkle, Colfax.
Yakima	Mrs. Anna R. Nichols, Yakima.

XI.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
WEST VIRGINIA.	
Barbour	E. A. Hunt, Philippi.
Berkeley	Chas. W. Crowell, Hedgesville.
Boone	M. T. Miller, Low Gap.
Braxton	W. B. Golden, Flatwoods.
Brooke	S. C. Underwood, Wellsburg.
Cabell	Edward Mays, Huntington.
Calhoun	T. C. Cain, Big Bend.
Clay	R. E. Slack, Clay.
Doddridge	C. T. Hyatt, West Union.
Fayette	J. T. Peters, Fayetteville.
Gilmer	Dallas C. Bailey, Glenville.
Grant	H. F. Groves, Petersburg.
Greenbrier	L. O. Haynes, Smoot.
Hampshire	Arthur Slonaker, Dillons Run.
Hancock	H. O. Miller, New Cumberland.
Hardy	E. A. Hawse, Baker.
Harrison	L. Wayman Ogden, Clarksburg.
Jackson	W. C. Casto, Ripley.
Jefferson	Isaac N. Bonham, Summit Point.
Kanawha	Geo. W. Jenkins, jr., Charleston.
Lewis	Wade Linger, Weston.
Lincoln	G. L. Pauley, Yawkey.
Logan	E. F. Skaggs, Logan.
Marion	Homer C. Toothman, Fairmont.
Marshall	H. E. Carmichael, Moundsville.
Mason	Alonzo C. Kelly, Point Pleasant.
Mercer	B. F. King, Princeton.
Mineral	Luke McDowell, Keyser.
Mingo	Floyd Evans, Kermit.
Monongalia	Lynn Hastings, Morgantown.
Monroe	O. R. Houchins, Alderson.
Morgan	Jesse R. Tyson, Berkeley Springs.
McDowell	W. C. Cook, Welch.
Nicholas	L. O. Bobbitt, Summersville.
Ohio	J. H. Lazear, Wheeling.
Pendleton	John A. Fultz, Franklin.
Pleasants	G. C. MacTaggart, St. Marys.
Pocahontas	Douglass McNeill, Buckeye.
Preston	D. K. Mason, Kingwood.
Putnam	W. W. Smith, Paradise.
Raleigh	Otway F. Cook, Beckley.
Randolph	Troy B. Wilmoth, Elkins.
Ritchie	J. F. Hatfield, Harrisville.
Roane	B. Frank Jarvis, Walton.
Summers	Lee Harper, Hinton.
Taylor	W. E. Leach, Grafton.
Tucker	R. E. King, Parsons.
Tyler	C. R. Inghram, Middlebourne.
Upshur	W. O. Hinkle, Buckhannon.
Wayne	W. H. Peters, Wayne.
Webster	Sampson N. Miller, Webster Springs.
Wetzel	F. M. Tuttle, New Martinsville.
Wirt	Leonard C. Dailey, Elizabeth.
Wood	Lawrence C. White, Parkersburg.
Wyoming	G. B. McGraw, Pineville.
WISCONSIN.	
Adams	Mrs. May Brearcy, Friendship.
Ashland	Thomas F. O'Connell, Ashland.
Barron	Regina Kohten, Barron.
Bayfield	Jessie N. Smith, Washburn.
Brown	E. A. Seymour, Green Bay.
Buffalo	H. J. Niehaus, Alma.
Burnett	Anna Ryss, Grantsburg.
Calumet	W. F. Stauss, Chilton.
Chippewa	Ada Felch, Chippewa Falls.
Clark	O. J. Thompson, Neillsville.
WISCONSIN—con.	
Columbia	Mary B. Clark, Portage.
Crawford	A. F. Schoonover, Gays Mills.
Dane:	
First dist.	Sylvanus Ames, Stoughton.
Second dist.	Thos. S. Thompson, Mount Horeb.
Dodge	John Kelley, Juneau.
Door	Catherine Conley, Sturgeon Bay.
Douglas	Vera C. Rehnstrand, Superior.
Dunn	Earle Edes, Menomonie.
Eau Claire	Lillia E. Johnson, Eau Claire.
Florence	Mrs. G. W. Kinnear, Florence.
Fond du Lac	Morvan Duel, Fond du Lac.
Forest	Linda Schmidt, Crandon.
Grant	E. J. Young, Lancaster.
Green	John N. Burns, Monroe.
Green Lake	George V. Kelley, Princeton.
Iowa	R. E. Hoskins, Dodgeville.
Iron	Della C. Emunson, Hurley.
Jackson	Mae E. Hardie, Black River Falls.
Jefferson	A. J. Thorne, Jefferson.
Juneau	Leah H. Diehl, Mauston.
Kenosha	J. J. Kerwin, Silver Lake.
Kewaunee	John E. Jones, Kewaunee.
La Crosse	Mrs. Blanche Chamberlain, Bangor.
La Fayette	W. W. Woolworth, Darlington.
Langlade	Bertha Moss, Antigo.
Lincoln	W. S. Freeman, Merrill.
Manitowoc	Joseph Voboril, Manitowoc.
Marathon	J. E. Giessel, Wausau.
Marinette	Mrs. Gertrude Schwittay, Marinette.
Marquette	Samuel Long, Montello.
Milwaukee	E. T. Griffin, Milwaukee.
Monroe	M. M. Haney, Sparta.
Oconto	Ellen B. McDonald, Oconto.
Oneida	F. A. Lowell, Rhinelander.
Outagamie	A. G. Meating, Appleton.
Ozaukee	Richard F. Beger, Fredonia.
Pepin	Cynthia Carlisle, Durand.
Pierce	H. B. Aasterud, Ellsworth.
Polk	Gail Chadwick, Balsam Lake.
Portage	L. A. Gordon, Stevens Point.
Price	Ida Johnson, Phillips.
Racine	Isabelle Swantz, Union Grove.
Richland	A. W. Zellmer, Richland Center.
Rock	O. D. Antisdel, Janesville.
Rusk	R. H. Burns, Ladysmith.
St. Croix	H. A. Aune, Baldwin.
Sauk	A. H. Martin, Baraboo.
Sawyer	Mrs. Josephine Grafton, Hayward.
Shawano	L. D. Roberts, Shawano.
Sheboygan	H. C. Dornbush, Plymouth.
Taylor	J. E. Phillips, Medford.
Trempealeau	Helen M. Berg, Whitehall.
Vernon	George E. Sanford, Viroqua.
Vilas	Arthur J. Austin, Eagle River.
Walworth	Helen Martin, Elkhorn.
Washburn	Lucy A. Leonard, Shell Lake.
Washington	M. T. Buckley, West Bend.
Waukesha	G. B. Rhoads, Waukesha.
Waupaca	R. C. Bigford, Manawa.
Waushara	Edward Coates, Wautoma.
Winnebago	R. E. Sanders, Oshkosh.
Wood	Robert Morris, Grand Rapids.
WYOMING.	
Albany	Mrs. N. Artisee Erickson, Laramie.
Big Horn	Mrs. Bertha K. Van Devender, Basin.
Campbell	Edith B. George, Gillette.
Carbon	Mrs. Myrtle B. Schalk, Rawlins.
Converse	Margaret Barry, Douglas.

XI.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

County.	County superintendent.	County.	County superintendent.
WYOMING—con.		WYOMING—con.	
Crook	Mrs. Catherine A. Lytle, Sundance.	Park	Nellie L. Underwood, Cody.
Fremont	Verna E. Wells, Lander.	Platte	Edith M. Hawes, Wheatland.
Goshen	Mrs. Lulu C. Koenig, Torrington.	Sheridan	Mrs. Blanche A. Blume, Sheridan.
Hot Springs	Mrs. Nellie L. Wales, Thermopolis.	Sweetwater	Mrs. Miriam W. Shedden, Rocksprings.
Johnson	Mrs. Bessie M. Bullis, Buffalo.	Uinta	Mrs. Jennie M. Isherwood, Evanston.
Laramie	Anna M. Dobbin, Cheyenne.	Washakie	Mrs. Angeline Wild, Worland.
Lincoln	Mrs. Myra E. Geer, Kemmerer.	Weston	Mrs. Florence E. Phillips, Newcastle.
Natrona	May Hamilton, Casper.		
Niobrara	Mrs. Della A. Grebe, Lusk.		

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS.

City.	Population census of 1910.	Superintendent or supervising principal.	City.	Population census of 1910.	Superintendent or supervising principal.
ALABAMA.			ARKANSAS.		
Alabama City	4,313	W. S. Leatherwood.	Arkadelphia	2,745	W. J. Breit.
Albany	6,118	R. W. Cowart.	Batesville	3,399	Sidney Pickens.
Anniston	12,794	D. R. Murphey.	Blytheville	3,849	Harvey H. Haley.
Attalla	2,513	Alice Coleman.	Camden	3,995	W. F. Hall.
Bessemer	10,864	L. L. Vann.	Conway	2,794	R. E. Womack.
Birmingham	132,685	J. H. Phillips.	Eldorado	4,202	Donald MacQueen.
Decatur	4,228	W. W. Benson.	Eureka Springs	3,228	C. S. Barnett.
Dothan	7,016	B. B. Baker.	Fayetteville	4,471	F. S. Root.
Eufaula	4,259	H. L. Upshaw.	Fordyce	2,794	G. R. Turrentine.
Florence	6,689	F. T. Appleby.	Fort Smith	23,975	C. J. Tidwell.
Gadsden	10,557	W. C. Griggs.	Helena	8,772	E. B. Tucker.
Girard	4,214	J. A. Lunceford.	Hope	3,639	D. L. Paisley.
Greenville	3,377	C. B. Gamble.	Hot Springs	14,434	O. L. Dunaway.
Huntsville	7,611	F. W. Williams.	Jonesboro	7,123	J. P. Womack.
Jasper	2,509	J. I. Sefield.	Little Rock	45,941	R. C. Hall.
Lanett	3,820	C. E. Lunceford.	Malvern	2,778	J. L. Pratt.
Mobile	51,521	S. S. Murphy.	Marianna	4,810	Fred MacCheesney.
Montgomery	38,136	W. R. Harrison.	Mena	3,953	H. E. Bowman.
Opelika	4,734	J. W. Watson.	Newport	3,557	J. H. Patterson.
Phoenix	4,555	J. C. McAuley.	North Little Rock	11,138	J. H. Davis.
Selma	13,649	Omer Carmichael.	Paragould	5,248	J. W. Ramsey.
Sheffield	4,865	L. E. Creel.	Pine Bluff	15,102	Junius Jordan.
Talladega	5,854	J. A. Baxley.	Prescott	2,705	C. M. Hirst.
Troy	4,961	John R. McLure.	Rogers	2,820	J. W. Oliver.
Tuscaloosa	8,407	J. M. Bennett.	Russellville	2,936	Frank E. McAnear.
Tuscumbia	3,324	H. B. Norton.	Stuttgart	2.740	John G. Rossman.
Tuskegee	2,803	Jas. K. Hunt.	Texarkana	5 655	Ury McKenzie.
Union Springs	4,055	E. S. Pugh.	Van Buren	3,878	D. M. Riggin.
ALASKA.			CALIFORNIA.		
Anchorage	3,480	T. R. McAnally.	Alameda	23,383	C. J. Du Four.
Douglas	....	Floy Tracy.	Alhambra	5,021	Chas. Emory Barber.
Fairbanks	3,541		Anaheim	2,628	Charles C. Smith.
Juneau	5,000	F. F. Sparks.	Bakersfield	12,727	Chas. E. Teach.
Ketchikan	....	W. A. Knox.	Berkeley	40,434	H. B. Wilson.
Nome	2,600	O. W. Baird.	Chico	3,750	Chas. H. Camper.
Valdez	2,500	F. G. Davis.	Coalinga	4,199	C. L. Geer.
			Colton	3,980	G. H. Jantzen.
ARIZONA.			Corona	3,540	Glen D. Wight.
			Emeryville	2,613	D. B. Lacy.
Bisbee	9,019	C. F. Philbrook.	Eureka	11,845	Geo. B. Albee.
Clifton	4,874	W. D. Baker.	Fresno	24,892	Jerome O. Cross.
Douglas	6,437	Harold Steele.	Glendale	2,746	R. D. White.
Globe	7,083	W. P. Bland.	Grass Valley	4,520	J. S. Hennessy.
Morenci	5,010	W. E. Lutz.	Hanford	4,829	S. O. Welday.
Nogales	3,514	G. H. Madden.	Hayward	2,746	M. L. Benson.
Phoenix	11,134	John D. Loper.	Lodi	2,697	R. J. Custer.
Prescott	5,092	S. H. Martin.	Long Beach	17,809	W. L. Stephens.
Tucson	13,193	Clinton E. Rose.	Los Angeles	319,198	Mrs. Susan M. Dorsey.
Yuma	2,914	Grant Van Hoose.			

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
CALIFORNIA—con.		
Marysville	5,430	L. P. Farris.
Merced	3,102	C. S. Clark.
Mill Valley	2,551	H. H. Matthew.
Modesto	4,034	W. E. Fought.
Monrovia	3,576	A. R. Clifton.
Monterey	4,923	J. H. Graves.
Napa	5,791	J. L. Shearer.
Nevada City	2,689	F. E. Tuck.
Oakland	150,174	Fred M. Hunter.
Ontario	4,274	J. W. Groves.
Orange	2,920	Geo. C. Sherwood.
Oroville	3,859	H. P. Short.
Oxnard	2,555	R. B. Haydock.
Palo Alto	4,486	A. C. Barker.
Pasadena	30,291	John F. West.
Petaluma	5,880	Bruce H. Painter.
Pomona	10,207	G. V. Whaley.
Porterville	2,696	W. A. Ferguson.
Red Bluff	3,530	J. D. Sweeney.
Redding	3,572	Frank A. Forderhase.
Redlands	10,449	Henry G. Clement.
Redondo Beach	2,935	C. A. Langworthy.
Richmond	6,802	Walter T. Helms.
Riverside	15,212	A. N. Wheelock.
Roseville	2,608	A. G. Grant.
Sacramento	44,696	Charles C. Hughes.
Salinas	3,736	Arthur Walter.
San Bernardino	12,779	B. R. Crandall.
San Diego	39,578	Henry C. Johnson.
San Francisco	416,912	Alfred Roncovieri.
San Jose	28,946	Alexander Sherriffs.
San Leandro	3,471	C. A. Harwell.
San Luis Obispo	5,157	Arthur H. Mabley.
San Mateo	4,384	Geo. W. Hall.
San Rafael	5,934	Oliver R. Hartzell.
Santa Ana	8,429	John A. Cranston.
Santa Barbara	11,659	Paul E. Stewart.
Santa Clara	4,348	W. J. Hayward.
Santa Cruz	11,146	John W. Linscott.
Santa Monica	7,847	Horace M. Rebok.
Santa Rosa	7,817	T. F. Brownscombe.
South Pasadena	4,649	George C. Bush.
Stockton	23,253	Ansel S. Williams.
Tulare	2,758	J. B. Weed.
Vallejo	11,340	Elmer H. Cave.
Ventura	2,945	Arthur L. Vincent.
Visalia	4,550	De Witt Montgomery.
Watsonville	4,446	T. S. MacQuiddy.
Whittier	4,550	U. G. Durfee.
Woodland	3,187	C. E. Dingle.
COLORADO.		
Alamosa	3,013	G. W. Allen.
Boulder	9,539	Wm. V. Casey.
Canon City	5,162	O. B. Drake.
Colorado Springs[1]	33,411	R. C. Hill.
Cripple Creek	6,206	Wilson M. Shafer.
Denver	213,381	Jesse H. Newlon.
Durango	4,686	E. E. Smiley.
Englewood	2,983	H. H. Donley.
Florence	2,712	J. P. Eskridge.
Fort Collins	8,210	A. H. Dunn.
Fort Morgan	2,800	O. F. Munson.
Grand Junction	7,754	R. E. Tope.
Greeley	8,179	G. E. Brown.
La Junta	4,154	Robert M. Tirey.
Lamar	2,977	E. C. Dilley.
Leadville	7,508	J. H. Walton.
Longmont	4,256	Chas. C. Casey.
Loveland	3,651	R. W. Truscott.
Monte Vista	2,544	H. H. Van Fleet.
Montrose	3,254	William Melcher.
COLORADO—con.		
Pueblo:		
District No. 1	44,395	J. W. McClinton.
District No. 20		John F. Keating.
Rocky Ford	3,230	R. J. Walters.
Salida	4,425	Edgar Kesner.
Sterling	3,044	J. A. Saxson.
Trinidad	10,204	H. M. Corning.
Victor	3,162	(See Cripple Creek.)
CONNECTICUT.[2]		
Ansonia	15,152	R. T. Tobin.
Berlin	3,728	B. R. Showalter.
Bethel	3,792	F. A. Berry.
Branford	6,047	H. S. Lovejoy.
Bridgeport	102,054	S. J. Slawson.
Bristol	13,502	Karl A. Reiche.
Canton	2,732	Wm. M. Strong.
Danbury	23,502	Frank K. Watson.
Darien	3,946	J. F. Williams.
Derby	8,991	John F. Pickett.
East Hartford	8,138	P. S. Barnes.
East Windsor	3,362	V. H. Tibbetts.
Enfield	9,719	G. C. Bowman.
Essex	2,745	W. A. Leonard.
Fairfield	6,134	Wm. E. Smith.
Farmington	3,478	L. S. Mills.
Glastonbury	4,796	F. S. Knox.
Greenwich	16,463	Edwin C. Andrews.
Griswold	4,233	Frank H. P. Clement, Jewett City.
Groton (P. O. Mystic).	6,495	F. H. Brewer.[3]
Guilford	3,001	F. L. Drew.
Hamden	5,850	Margaret L. Keefe.
Hartford	98,915	Thos. S. Weaver.
Huntington	6,545	(See Shelton.)
Killingly (P. O. Danielson).	6,564	Horace F. Turner.
Litchfield	3,005	Paul Dillingham.
Manchester	13,641	A. F. Howes.
Meriden	32,066	David Gibbs.
Middletown	20,749	R. B. Sellew.
Milford	4,366	H. I. Mathewson.
Montville	2,804	Van Buren Moody, 224 Broad Street, Norwich.
Naugatuck	12,722	H. E. Chittenden.
New Britain	43,916	S. H. Holmes.
New Canaan	3,667	H. W. Saxe.
New Haven	133,605	F. H. Beede.
New Haven (Westville district).		Chester A. Moody.
New London	19,659	W. A. Hanson.
New Milford	5,010	John Pettibone.
Newtown	3,012	Leo. T. Hickson.
Norwalk	24,211	G. V. Buchanan.
Norwich	28,219	E. J. Graham.
Orange (P. O. West Haven).	11,272	Edgar C. Stiles.
Plainfield	6,719	J. L. Chapman.
Plainville	2,882	Orin L. Judd.
Plymouth (P. O. Terryville).	5,021	H. S. Fisher.
Portland	3,425	J. F. Connolly.
Putnam	7,280	Wm. L. MacDonald.
Ridgefield	3,118	Charlotte J. Wakeman.
Rockville	9,087	H. O. Clough.
Salisbury	3,522	W. M. Teague.
Seymour	4,786	Ridgley C. Clark.
Shelton	6,545	H. E. Fowler.
Simsbury	2,537	J. B. McLean.
Southington	6,516	E. C. Witham.

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[1] Includes Colorado City.

[2] For other Connecticut superintendents, see p. 35.

[3] Chairman board of school visitors.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
CONNECTICUT—continued.		
South Manchester	(4)	F. A. Verplanck.
Sprague	2,551	F. W. Porter.
Stafford	5,233	A. B. Handy.
Stamford	28,836	F. S. Camp.
Stonington	9,154	Wm. R. Snyder.
Stratford	5,712	C. C. Thompson.
Suffield	3,841	H. B. Chapman.
Thomaston	3,533	E. W. Small.
Thompson	4,804	Elwell F. Kimball.
Torrington	16,840	G. J. Vogel.
Wallingford	11,155	J. W. Kratzer.
Waterbury	73,141	B. W. Tinker.
Waterford	3,097	(See Montville.)
Watertown	3,850	G. C. Swift.
West Hartford	4,808	Wm. H. Hall.
Westport	4,259	John A. Young.
Wethersfield	3,148	W. H. Mandrey.
Winchester (P. O. Winsted).	8,679	John Lund.
Windham (P. O. Willimantic).	12,604	Egbert A. Case.
Windsor	4,178	Daniel Howard.
Windsor Locks	3,715	Leander Jackson.
DELAWARE.		
Dover	3,720	W. B. Thornburgh.
Milford	2,603	Robert E. Shilling.
New Castle	3,351	Henry E. Snavely.
Wilmington	87,411	Clifford J. Scott.
DISTRICT OF COLUMBIA.		
Washington	331,069	Frank W. Ballou.
FLORIDA.		
Apalachicola	3,065	A. A. Core.
Bartow	2,662	A B. Connor.
Daytona	3,082	J. F. Eastham.
De Land	2,812	B. F. Ezell.
Fernandina	3,482	L. L. Owens.
Gainesville	6,183	F. W. Buchholz.
Jacksonville	57,699	F. A. Hathaway.
Key West	19,945	V. S. Lowe.
Lake City	5,032	D. S. Dennard.
Lakeland	3,719	Charles M. Jones.
Live Oak	3,450	Harry G. Metcalf.
Miami	5,471	A. C. Alleshouse.
Ocala	4,370	P. H. Hensley.
Orlando	3,894	S. Johnson.
Palatka	3,779	W. H. Cassels.
Pensacola	22,982	A. S. Edwards.
Quincy	3,204	R. M. Evans.
St. Augustine	5,494	Emmett Taylor.
St. Petersburg	4,127	George M. Lynch.
Sanford	3,570	T. W. Lawton.
Tallahassee	5,018	R. M. Sealey.
Tampa	37,782	J. E. Knight.
GEORGIA.		
Albany	8,190	R. E. Brooks.
Americus	8,063	J. E. Mathis.
Athens	14,913	G. G. Bond.
Atlanta	154,839	W. F. Dykes.
Augusta	41,040	Lawton B. Evans.
Bainbridge	4,217	S. J. Underwood.
Barnesville	3,068	E. T. Holmes.
Brunswick	10,182	C. E. Dryden.
Carrollton	3,297	J. N. Haddock.
Cartersville	4,067	L. C. Evans.
Cedartown	3,551	J. E. Purks.
GEORGIA—contd.		
Columbus	20,554	R. B. Daniel.
Cordele	5,883	J. M. Collier.
Covington	2,697	H. B. Robertson.
Cuthbert	3,210	Robert G. Hall.
Dalton	5,324	J. H. Watson.
Dawson	3,827	J. C. Dukes.
Douglas	3,550	W. A. Little.
Dublin	5,795	W. P. Martin.
East Point	3,682	J. R. Campbell.
Elberton	6,483	J. Paul Spence.
Fitzgerald	5,795	John W. Barnhi.
Fort Valley	2,697	Ralph Newton.
Gainesville	5,925	J. A. Mershon.
Griffin	7,478	J. A. Jones.
Hawkinsville	3,420	M. W. Harris.
La Grange	5,587	F. F. Rowe.
Macon	40,665	C. H. Bruce.
Marietta	5,949	C. A. Keith.
Milledgeville	4,385	Kyle T. Alfriend.
Monroe	3,029	C. W. Reid.
Moultrie	3,349	J. H. Saxon.
Newnan	5,548	B. F. Pickett.
Quitman	3,915	H. D. Knowles.
Rome	12,099	B. F. Quigg.
Sandersville	2,641	J. F. Lambert.
Savannah	65,064	C. B. Gibson.
Statesboro	2,529	R. M. Monts.
Summerville	4,361	R. W. Ransom.
Thomasville	6,727	B. B. Broughton.
Toccoa	3,120	Edmund Wroe.
Valdosta	7,656	A. G. Cleveland.
Washington	3,065	W. T. Foster.
Waycross	14,485	A. G. Miller.
Waynesboro	2,729	Jack Lance.
IDAHO.		
Boise	17,358	P. J. Zimmers.
Caldwell	3,543	J. J. Rae.
Coeur d'Alene	7,291	J. V. Buck.
Idaho Falls	4,827	R. H. Snyder.
Lewiston	6,043	Joel Jenifer.
Moscow	3,670	T. B. Shank.
Nampa	4,205	A. S. Erickson.
Pocatello	9,110	W. R. Siders.
Sandpoint	2,993	J. L. Breckenridge.
Twin Falls	5,258	Harold G. Blue.
Wallace	3,000	C. D. Brock.
Weiser	2,600	D. C. Neifert.
ILLINOIS.		
Alton	17,528	W. C. Reavis.
Anna	2,809	E. E. McLaughlin.
Aurora:		
East side	29,807	C. M. Bardwell.
West side		H. T. McKinney.
Averyville (P. O. Peoria).	2,668	H. E. Iler.
Batavia	4,436	H. C. Storm.
Beardstown	6,107	H. G. Russell.
Belleville	21,122	Oscar F. Weber.
Belvidere	7,253	James H. Smith.
Benton	2,675	Wm. J. Waller.
Berwyn	5,841	E. A. Wilson.
Bloomington	25,768	S. K. McDowell.
Blue Island	8,043	J. E. Lemon.
Bridgeport	2,703	C. E. Crawford.
Bushnell	2,619	T. W. Everitt.
Cairo	14,548	T. C. Clendenen.
Canton	10,453	G. W. Gayler.
Carbondale	5,411	A. R. Boone.
Carlinville	3,616	H. J. Blue.
Carmi	2,833	Mrs. Maude Chalfant.

[4] Part of Manchester in 1910.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
ILLINOIS—contd.		
Carterville	2,971	B. F. Parr (high school). J. L. D. Hartwell. (grades).
Centralia	9,680	S. H. Bohn.
Champaign	12,421	W. W. Earnest.
Charleston	5,884	Earl W. Anderson.
Chester	2,747	Chas. O. Todd.
Chicago	2,185,283	Peter A. Mortenson.
Chicago Heights	14,525	Floyd T. Goodier.
Cicero	14,557	W. W. Lewton.
Clinton	5,165	H. H. Edmunds.
Coal City	2,667	Barbara Vollmer.
Collinsville	7,478	C. H. Dorris.
Danville	27,871	G. P. Randle.
Decatur	31,140	J. O. Engleman.
De Kalb	8,102	F. R. Ritzman.
Dixon	7,216	....
Downers Grove	2,601	Kenneth M. Snapp.
Dundee	5,100	Osher Schlaifer.
Duquoin	5,454	Joe Strickler.
East Moline	2,665	D. B. Hoffman.
East St. Louis	58,547	D. W. Potts.
Edwardsville	5,014	Chas. F. Ford.
Effingham	3,898	G. N. Smith.
Eldorado	3,366	J. W. Allen.
Elgin	25,976	Robert I. White.
Evanston:		
District No. 75	24,978	Ernest A. Smith.
District No. 76		F. W. Nichols.
Fairbury	2,505	E. W. Powers.
Forest Park	6,594	Henry Buellesfield.
Freeport	17,567	S. E. Raines.
Galena	4,835	Katherine H. Obye.
Galesburg	22,089	T. W. Callihan.
Geneseo	3,199	John M. Edman.
Granite City	9,903	L. P. Frohardt.
Greenville	3,178	Alex Long.
Harrisburg	5,309	T. O. Elliott.
Harvard	3,008	Chas. O. Haskell.
Harvey	7,227	F. L. Miller.
Havana	3,525	T. E. Savage.
Herrin	6,861	R. V. Jordan.
Highland	2,675	C. L. Dietz.
Highland Park:		
Distrist No. 107.	4,209	Jesse L. Smith.
District No. 108.		Clarke G. Wright.
Hillsboro	3,424	H. J. Beckemeyer.
Hoopeston	4,698	W. R. Lowery.
Jacksonville	15,326	H. A. Perrin.
Jerseyville	4,113	Carl W. Allison.
Johnston City	3,248	Nat Boomer.
Joliet	34,670	R. O. Stoops.
Kankakee	13,986	F. N. Tracy.
Kewanee	9,307	W. R. Curtis.
La Grange	5,282	A. S. Anderson.
Lake Forest	3,349	John E. Baggett.
La Salle	11,537	J. B. McManus.
Lawrenceville	3,235	J. F. Grisamore.
Lincoln	10,892	D. F. Nickols.
Litchfield	5,971	D. H. Wells.
Lockport	2,555	T. B. Walling.
Macomb	5,774	J. I. Lynch.
Madison	5,046	J. K. Elwood.
Marion	7,093	C. J. Ramsey.
Marseilles	3,291	M. R. Grigsby.
Marshall	2,569	F. G. Edwards.
Mattoon	11,456	J. F. Wiley.
Maywood (district No. 89)	8,033	Eugene La Rowe.
Melrose Park	4,806	
Mendota	3,806	R. E. Beebe.
Metropolis	4,655	C. A. McGinnis.
Moline	24,199	L. A. Mahoney.
Monmouth	9,128	L. L. Caldwell.
Morris	4,563	K. C. Merrick.
Mound City	2,837	Mary Roberson.
Mount Carmel	6,934	E. W. Martin.
Mount Olive	3,501	J. Orin Powers.
Mount Vernon	8,007	J. B. Hendricks.
Murphysboro	7,485	S. J. Shomaker.
Naperville	3,449	O. A. Waterman.
Normal	4,024	C. F. Miller.
North Chicago	3,306	F. E. Deyoe.
Oak Park	19,444	W. J. Hamilton.
Oglesby	3,194	N. M. Mason
Olney	5,011	H. W. Hostettler.
Ottawa	9,535	C. J. Byrne.
Pana	6,055	J. L. Hart.
Paris	7,664	H. M. Hinkle.
Paxton	2,912	O. J. Bainum.
Pekin	9,897	R. C. Smith.
Peoria	66,950	A. W. Beasley.
Peru	7,984	A. H. Karn.
Petersburg	2,587	M. L. Test.
Pinckneyville	2,722	B. Q. Hoskinson.
Pontiac	6,090	G. J. Koons.
Princeton	4,131	C. B. Smith.
Quincy	36,587	C. M. Gill.
Robinson	3,863	Harry E. Green.
Rochelle	2,732	O. N. Wing.
Rock Falls	2,657	Mary E. Canode.
Rockford	45,401	E. E. Lewis.
Rock Island	24,335	E. C. Fisher.
St. Charles	4,046	G. E. Thompson.
Salem	2,669	N. E. Jaycox.
Sandwich	2,557	W. W. Woodbury.
Savanna	3,691	C. H. Le Vitt.
Shelbyville	3,590	William Harris.
Sparta	3,081	W. H. W. Wasson.
Springfield	51,678	I. M. Allen.
Spring Valley	7,035	Clifford L. Sarver.
Staunton	5,048	Wm. E. Eccles.
Sterling:		
District No.10.	7,467	Miss A. L. Hill.
District No.11.		Clarence Selley.
Streator	14,253	H. B. Fisher.
Sullivan	2,621	T. H. Finley.
Sycamore	3,926	O. E. Peterson.
Taylorville	5,446	Edgar S. Jones.
Urbana	8,245	A. P. Johnson.
Vandalia	2,974	John W. R. Finley.
Venice	3,718	S. J. McComis.
Virden	4,000	C. Slone (high school). John Little (grades).
Waukegan	16,069	John S. Clark
West Hammond (P. O. Hammond, Ind.).	·4,948	Otis W. Glamore.
Westville	2,607	F. E. Dugas.
Wheaton	3,423	J. B. Russell.
Whitehall	2,854	Robert G. Smith.
Wilmette	4,943	J. R. Harper.
Winnetka	3,168	C. W. Washburne.
Woodstock	4,331	R. W. Bardwell.
Zion City	4,789	Joseph L. Bishop.
INDIANA.		
Alexandria	5,096	F. W. Stoler.
Anderson	22,476	W. A. Denny.
Angola	2,610	H. B. Allman.
Attica	3,335	W. F. Mullinnix.
Auburn	3,919	G. W. Youngblood.
Aurora	4,410	J. R. Houston.
Bedford	8,716	E. W. Montgomery.
Bicknell	2,794	W. W. Carter.
Bloomington	8,838	E. E. Ramsey.
Bluffton	4,987	P. A. Allen.
Boonville	3,934	W. F. Vogel.
Brazil	9,340	C. P. Keller.
Clarksville (P. O. Jeffersonville).	2,743	Charles P. Crone.

XII.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.	City.	Population census of 1910.	Superintendent or supervising principal.
INDIANA—con.			IOWA.		
Clinton	6,229	G. W. McReynolds.	Albia	4,969	G. H. Brinegar.
Columbia City	3,448	C. E. Spaulding.	Algona	2,908	J. F. Overmyer.
Columbus	8,813	Donald Du Shane.	Ames	4,223	E. J. Bodwell.
Connersville	7,738	A. C. Payne.	Anamosa	2,983	H. M. Stiles.
Crawfordsville	9,371	L. T. Turpin.	Atlantic	4,560	A. L. Boyer.
Crown Point	2,526	J. M. Geiser.	Belle Plaine	3,121	J. R. McVicker.
Decatur	4,471	M. F. Worthman.	Boone	10,347	G. S. Wooten.
Dunkirk	3,031	Harry L. Nixon.	Burlington	24,324	E. M. Sipple.
East Chicago	19,098	E. N. Canine.	Carroll	3,546	E. T. Housh.
Elkhart	19,282	B. W. Kelly.	Cedar Falls	5,012	F. L. Mahannah.
Elwood	11,028	A. W. Konold.	Cedar Rapids	32,811	J. J. McConnell.
Evansville	69,647	L. P. Bénézet.	Centerville	6,936	H. M. Taylor.
Fairmount	2,506	Otto Hamilton.	Chariton	3,794	J. R. Cougill.
Fort Wayne	63,933	R. W. Himelick.	Charles City	5,892	Claude F. Brown.
Frankfort	8,634	W. R. Hough.	Cherokee	4,884	F. W. Johansen.
Franklin	4,502	J. C. Webb.	Clarinda	3,832	E. L. Weaver.
Garrett	4,149	George C. Carroll.	Clinton	25,577	F. W. Hicks.
Gary	16,802	Wm. A. Wirt.	Colfax	2,524	E. J. Pollock.
Gas City	3,224	N. J. Lasher.	Council Bluffs	29,292	Theodore Saam.
Goshen	8,514	J. W. Foreman.	Cresco	2,658	C. B. Jackson.
Greencastle	3,790	E. C. Dodson.	Creston	6,924	Arthur W. Crane.
Greenfield	4,448	M. S. Mahan.	Davenport	43,028	Frank L. Smart.
Greensburg	5,420	E. C. Jerman.	Decorah	3,592	J. H. Voris.
Hammond	20,925	E. S. Monroe.	Denison	3,133	C. E. Humphrey.
Hartford City	6,187	A. L. Frantz.	Des Moines	86,368	J. W. Studebaker.
Huntington	10,272	J. M. Scudder.	Dubuque	38,494	J. H. Harris.
Indianapolis	233,650	E. U. Graff.	Eagle Grove	3,387	W. H. Fasold.
Jasonville	3,295	E. A. O'Dell.	Estherville	3,404	F. H. Sunderlin.
Jeffersonville	10,412	E. G. McCullum.	Fairfield	4,970	C. F. Garrett.
Kendallville	4,981	P. C. Emmons.	Fort Dodge	15,543	L. H. Minkel.
Kokomo	17,010	C. V. Haworth.	Fort Madison	8,900	A. I. Tiss.
La Fayette	20,081	R. F. Hight.	Glenwood	4,052	J. R. Neveln.
Laporte	10,525	A. L. Trester.	Grinnell	5,036	Eugene Henely.
Lawrenceburg	3,930	J. W. Riddle.	Hampton	2,617	H. L. Cecil.
Lebanon	5,474	Paul Van Riper.	Harlan	2,570	Mary J. Wyland.
Linton	5,906	Slater Bartlow, jr.	Independence	3,517	T. R. Roberts.
Logansport	19,050	J. W. Wilkinson.	Indianola	3,283	O. E. Smith.
Madison	6,934	E. O. Muncie.	Iowa City	10,091	Iver A. Opstad.
Marion	19,359	A. E. Highley.	Iowa Falls	2.797	O. S. Von Krog.
Martinsville	4,529	Willis Holman.	Keokuk	14,008	William Aldrich.
Michigan City	19,027	L. W. Keeler.	Knoxville	3,190	J. M. Davis.
Mishawaka	11,886	D. W. Horton.	Le Mars	4,157	S. T. Neveln.
Mitchell	3,438	J. H. Shipp.	Manchester	2,758	J. S. Hilliard.
Montpelier	2,786	L. E. Kelley.	Maquoketa	3,570	B. S. Moyle.
Mount Vernon	5,563	W. S. Painter.	Marion	4,400	L. R. Isaacs.
Muncie	24,005	T. F. Fitzgibbon.	Marshalltown	13,374	Wm. F. Shirley.
New Albany	20,629	H. A. Buerk.	Mason City	11,230	Frank T. Vasey.
Newcastle	9,446	E. J. Llewelyn.	Missouri Valley	3,187	Lorne Smylie.
Noblesville	5,073	W. A. Stockinger.	Mount Pleasant	3,874	C. W. Cruikshank.
North Vernon	2,915	G. M. Hopkins.	Muscatine	16,178	Samuel A. Potts.
Peru	10,910	D. H. Brown.	Mystic	2,663	Chas. C. Foley.
Plymouth	3,838	L. E. Steinebach.	Newton	4,616	Grover H. Alderman.
Portland	5,130	G. E. Derbyshire.	Oelwein	6,028	A. W. Moore.
Princeton	6,448	J. W. Stott.	Oskaloosa	9,466	O. P. Flower.
Richmond	22,324	J. H. Bentley.	Ottumwa	22,012	H. E. Blackmar.
Rochester	3,364	A. L. Whitmer.	Pella	3,021	F. M. Frush.
Rockport	2,736	J. H. Diehl.	Perry	4,630	Henry W. Chehock.
Rushville	4,925	J. H. Scholl.	Red Oak	4,830	J. R. Inman.
Seymour	6,305	T. A. Mott.	Sheldon	2,941	J. N. Cunningham.
Shelbyville	9,500	J. W. Holton.	Shennandoah	4,976	E. B. Delzell.
South Bend	53,684	W. W. Borden.	Sioux City	47,828	M. G. Clark.
Sullivan	4,115	A. W. Youngblood.	Spencer	3,005	J. R. McAnelly.
Tell City	3,369	C. Newman.	Valley Junction	2,573	S. L. Miller..
Terre Haute	58,157	James M. Tilley.	Vinton	3,336	K. D. Miller.
Tipton	4,075	H. M. Dixon.	Washington	4,380	W. C. Harding.
Union City	3,209	Roy P. Wischart.	Waterloo:		
Valparaiso	6,987	C. W. Boucher.	East Side	26,693	C. W. Kline.
Vincennes	14,895	E. N. Haskins.	West Side		H. D. Lee.
Wabash	8,687	O. J. Neighbours.	Waverly	3,205	T. M. Clevenger.
Warsaw	4,430	J. M. Leffel.	Webster City	5,208	D. M. Kelly.
Washington	7,854	R. N. Tirey.	Winterset	2,818	M. R. Hassel.
West Lafayette	3,867	F. A. Burtsfield.			
West Terre Haute	3,083	T. V. Pruitt.	KANSAS.		
Whiting	6,587	J. H. Hoskinson.	Abilene	4,118	W. A. Stacey.
Winchester	4,266	O. R. Baker.	Anthony	2,669	O. F. Werner.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
KANSAS—con.		
Arkansas City	7,508	C. E. St. John.
Atchison	16,429	H. P. Study.
Beloit	3,082	W. O. Steen.
Caney	3,597	N. H. Shonk.
Chanute	9,272	J. F. Hughes.
Cherryvale	4,304	Glenn A. De Lay.
Clay Center	3,438	Emil Kratochvil.
Coffeyville	12,687	A. I. Decker.
Columbus	3,064	M. S. Catlett.
Concordia	4,415	J. E. Edgerton.
Council Grove	2,545	J. J. Haney.
Dodge City	3,214	R. E. Long.
Eldorado	3,129	J. W. Murphy.
Emporia	9,058	L. A. Lowther.
Fort Scott	10,463	H. D. Ramsey.
Fredonia	3,040	E. A. Elliott.
Frontenac	3,396	Omar P. Stevens.
Galena	6,096	E. E. Stonecipher.
Garden City	3,171	C. I. Vinsonhaler.
Great Bend	4,622	Charles F. Grabske.
Herington	3,273	E. E. Mitchell.
Hiawatha	2,974	Geo. G. Pinney.
Holton	2,842	M. H. Read.
Horton	3,600	F. M. Thompson.
Humboldt	2,548	T. A. Edgerton.
Hutchinson	16,364	J. O. Hall.
Independence	10,480	C. S. Risdon.
Iola	9,032	Chas. A. Wagner.
Junction City	5,598	J. H. Clement.
Kansas City	82,331	M. E. Pearson.
Kingman	2,570	G. H. Jaggard.
Larned	2,911	R. V. Phinney.
Lawrence	12,374	H. P. Smith.
Leavenworth	19,363	Ira J. Bright.
McPherson	3,546	R. W. Potwin.
Manhattan	5,722	E. B. Gift.
Neodesha	2,872	V. M. Liston.
Newton	7,862	B. F. Martin.
Olathe	3,272	E. N. Hill.
Osawatomie	4,046	C. A. Axton.
Ottawa	7,650	A. F. Senter.
Paola	3,207	O. C. Graber.
Parsons	12,463	John F. Barnhill.
Pittsburg	14,755	John F. Bender.
Pratt	3,302	W. A. Wood.
Rosedale	5,960	A. P. Vaughn.
Salina	9,688	W. S. Heusner.
Topeka	43,684	A. T. Stout.
Wellington	7,034	A. D. Catlin.
Wichita	52,450	L. W. Mayberry.
Winfield	6,700	J. W. Gowans.
KENTUCKY.		
Ashland	8,688	J. W. Bradner.
Bellevue (P. O. Newport).	6,683	Vaught Mills.
Bowling Green	9,173	T. C. Cherry.
Catlettsburg	3,520	H. L. Donovan.
Central City	2,545	W. C. Bell.
Corbin	2,589	Wm. Richie.
Covington	53,270	Harry S. Cox.
Cynthiana	3,603	R. I. Cord.
Danville	5,420	L. C. Bosley.
Dayton	6,979	Sophie F. Steinhaues.
Earlington	3,931	C. E. Dudley.
Frankfort	10,465	J. W. Ireland.
Franklin	3,063	D. H. Lyon.
Fulton	2,575	J. C. Cheek.
Georgetown	4,533	L. G. Wesley.
Harrodsburg	3,147	A. K. McKemie.
Henderson	11,452	M. E. Ligon.
Hickman	2,736	J. M. Calvin.
Hopkinsville	9,419	J. C. Waller.
Lebanon	3,077	J. R. Sterret.
Lexington	35,099	M. A. Cassidy.
Louisville	223,928	Zenos E. Scott.
KENTUCKY—con.		
Ludlow	4,163	W. D. Reynolds.
Madisonville	4,966	R. H. Gatton.
Mayfield	5,916	D. W. Bridges.
Maysville	6,141	W. J. Caplinger.
Middlesboro	7,305	T. W. Oliver.
Morganfield	2,725	R. T. Whittinghill.
Mount Sterling	3,932	H. A. Babb.
Newport	30,309	E. F. Sporing.
Nicholasville	2,935	H. L. Smith.
Owensboro	16,011	James H. Risley.
Paducah	22,760	Ralph Yakel.
Paris	5,859	Lee Kirkpatrick.
Princeton	3,015	I. J. Mars.
Richmond	5,340	J. Howard Payne.
Russellville	3,111	C. T. Canon.
Shelbyville	3,412	J. T. Hazelrigg.
Somerset	4,491	J. P. W. Brouse.
Winchester	7,156	Murrey Stevenson.
LOUISIANA.		
Abbeville	2,907	J. E. Harper.
Alexandria	11,213	W. J. Avery.
Baton Rouge	14,897	P. H. Griffith.
Covington	2,601	A. J. Park.
Crowley	5,099	J. R. DeMass.
Donaldsonville	4,090	B. C. Alwes.
Franklin	3,857	L. A. Law.
Hammond	2,942	W. J. Dunn.
Houma	5,024	H. L. Bourgeois.
Jennings	3,925	W. P. Arnette.
Kentwood	3,609	J. A. Arnett.
Lafayette	6,392	A. A. McBride.
Lake Charles	11,449	Ward Anderson.
Minden	3,002	C. H. Young.
Monroe	10,209	Ernest L. Neville.
Morgan City	5,477	Joe Farrar.
Natchitoches	2,532	M. C. Taylor.
New Iberia	7,499	C. M. Balion, jr.
New Orleans	339,075	J. M. Gwinn.
Opelousas	4,623	Paul D. Pavy.
Patterson	2,998	L. H. Denman.
Plaquemine	4,955	Harry De La Rue.
Ruston	3,377	H. E. Townsend.
Shreveport	28,015	C. C. Whisonhurt.
Thibodaux	3,824	W. S. Lafarque.
Winnfield	2,925	A. Leonard Allen.
MAINE.		
Auburn	15,064	H. H. Randall.
Augusta	13,211	H. H. Stuart.
Bangor	24,803	True C. Morrill.
Bar Harbor	4,441	Frank McGouldrick.
Bath	9,396	C. L. Smith.
Belfast	4,618	E. E. Roderick.
Biddeford	17,079	C. A. Weed.
Brewer	5,667	F. W. Burrill.
Bridgeton	2,660	Guy M. Monk.
Brunswick	6,621	John A. Cone.
Calais	6,116	W. H. Phinney.
Camden	3,015	J. L. Dyer.
Caribou	5,377	C. A. Grant.
Chelsea (P. O. Coopers Mills).	3,216	Lila M. Northrup.
Dexter	3,530	J. A. Hamlin.
East Livermore (P. O. Livermore Falls).	2,641	E. R. Bowdoin.
Eastport	4,961	W. H. Sturtevant.
Ellsworth	3,549	R. E. Stevens.
Fairfield	4,435	Merlin C. Joy.
Farmington	3,210	W. B. Woodbury.
Fort Fairfield	4,381	C. E. Glover.
Fort Kent	3,710	Catherine Ouellette.
Gardiner	5,311	Leland A. Ross.
Gorham	2,822	(See Westbrook.)
Hallowell	2,864	W. F. Packard.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
MAINE—con.		
Houlton	5,845	Thos. P. Packard.
Jay	2,987	H. R. Houston.
Kennebunk	3,099	Merton T. Goodrich.
Kittery	3,533	E. S. Foster.
Lewiston	26,247	C. W. Bickford.
Lisbon (P. O. Lisbon Falls).	4,116	A. R. Carter.
Lubec	3,363	John Paton.
Madison	3,379	(See Skowhegan.)
Millinocket	3,368	W. M. Marr.
Milo	2,556	A. L. Shorey.
Norway	3,002	W. E. Stuart.
Old Town	6,317	Willard O. Chase
Orono	3,555	
Paris	3,436	A. B. Garcelon.
Pittsfield	2,891	T. W. McQuaide.
Portland	58,571	W. D. Fuller.
Presque Isle	5,179	S. E. Preble.
Rockland	8,174	H. C. Hull.
Rumford	6,777	L. E. Williams.
Saco	6,583	L. L. Young.
Sanford	9,049	B. E. Packard.
Skowhegan	5,341	L. W. Gerrish.
South Berwick	2,935	W. C. McCue.
South Portland	7,471	S. M. Hamlin.
Van Buren	3,065	Chas. L. O'Connell.
Waldoboro	2,656	Victor V. Thompson.
Waterville	11,458	W. H. Patten.
Westbrook	8,281	R. J. Libby.
Winslow	2,709	G. E. Paine.
York	2,802	(See Kittery.)
MARYLAND.		
Annapolis	8,609	George Fox.
Baltimore	558,485	Henry S. West.
Brunswick	3,721	Oscar M. Fogle.
Cambridge	6,407	James B. Noble.
Chestertown	2,735	Edw. J. Clarke.
Crisfield	3,468	F. E. Gardner.
Cumberland	21,839	Edw. F. Webb.
Easton	3,083	C. A. McBride.
Frederick	10,411	G. Lloyd Palmer.
Frostburg	6,028	Raymond E. Staley.
Hagerstown	16,507	B. J. Grimes.
Havre de Grace	4,212	Walter H. Davis.
Salisbury	6,690	J. M. Bennett.
Western Port	2,702	O. H. Bruce.
Westminster	3,295	Maurice S. H. Unger.
MASSACHUSETTS.		
Abington	5,455	(See Bridgewater.)
Adams	13,026	F. A. Bagnall.
Agawam	3,501	W. E. Gushee.
Amesbury	9,894	L. T. Hopkins.
Amherst	5,112	J. O. Cook.
Andover	7,301	H. C. Sanborn.
Arlington	11,187	G. C. Minard.
Athol	8,536	W. Scott Ward.
Attleboro	16,215	L. A. Fales.
Ayer	2,797	F. C. Johnson.
Barnstable	4,676	G. H. Galger.
Barre	2,957	Albert S. Cole.
Belmont	5,542	G. P. Armstrong.
Beverly	18,650	S. H. Chace.
Billerica	2,789	Eugene C. Vining.
Blackstone	5,648	C. W. Walter.
Boston	670,585	Frank V. Thompson
Braintree	8,066	Clarence N. Flood.
Bridgewater	7,688	L. W. Grant.
Brockton	56,878	John F. Scully.
Brookline	27,792	O. C. Gallagher.
Cambridge	104,839	M. E. Fitzgerald.
Canton	4,797	John C. Davis.
Chelmsford	5,010	W. K. Putney.
Chelsea	32,452	Frank E. Parlin.
MASSACHUSETTS—continued.		
Chicopee	25,401	John C. Gray.
Clinton	13,075	T. F. Gibbons.
Cohasset	2,585	O. K. Collins.
Concord	6,421	W. A. Hall.
Dalton	3,568	H. L. Allen.
Danvers	9,407	H. J. Phipps.
Dartmouth	4,378	F. L. Kendall.
Dedham	9,284	R. W. Hine.
Dracut	3,461	Chas. L. Randall.
Dudley	4,267	W. F. Sims.
East Bridgewater	3,363	Edgar H. Grout.
Easthampton	8,524	W. D. Miller.
Easton	5,139	C. E. Wheeler.
Everett	33,484	Fairfield Whitney.
Fair Haven	5,122	Chas. F. Prior.
Fall River	119,295	H. L. Belisle.
Falmouth	3,144	Carl Holman.
Fitchburg	37,826	E. W. Robinson.
Foxboro	3,863	Ira A. Jenkins.
Framingham	12,948	E. W. Fellows.
Franklin	5,641	A. W. Hale.
Gardner	14,699	F. T. Reynolds.
Gloucester	24,398	T. M. Haines.
Grafton	5,705	Geo. A. Coe.
Great Barrington	5,926	R. H. Bellows.
Greenfield	10,427	W. P. Abbott.
Hardwick	3,524	(See Barre.)
Haverhill	44,115	Albert L. Barbour.
Hingham	4,965	(See Cohasset.)
Holbrook	2,816	J. J. Quinn.
Holliston	2,711	C. E. Fisher.
Holyoke	57,730	W. R. Peck.
Hudson	6,743	B. D. Brown.
Ipswich	5,777	J. I. Horton.
Lawrence	85,892	Bernard M. Sheridan.
Lee	4,106	Clarence E. Michels.
Leicester	3,237	T. W. King.
Lenox	3,060	T. F. Kane.
Leominster	17,580	Wm N. Perry.
Lexington	4,918	H. H. Lowry.
Lowell	106,294	Hugh J. Molloy.
Ludlow	4,948	(See Agawam.)
Lynn	89,336	C. S. Jackson.
Malden	44,404	F. G. Marshall.
Manchester	2,673	Frank C. Benedict.
Mansfield	5,183	N. G. Howard.
Marblehead	7,338	Frank H. Hill.
Marlboro	14,579	Ernest P. Carr.
Maynard	6,390	Wm H. Millington.
Medfield	3,466	A. S. Ames.
Medford	23,150	F. H. Nickerson.
Medway	2,696	C. E. Fisher.
Melrose	15,715	John Anthony.
Methuen	11,448	E. L. Haynes.
Middleboro	8,214	C. H. Bates.
Milford	13,055	A. O. Caswell.
Millbury	4,740	C. C. Ferguson.
Milton	7,924	Joseph A. Ewart.
Monson	4,758	Francis S. Brick.
Montague	6,866	M. O. Edson.
Nantucket	2,962	E. S. Tirrell.
Natick	9,866	E. L. Willard.
Needham	5,026	R. L. West.
New Bedford	96,652	Allen P. Keith.
Newburyport	14,949	W. C. Moore.
Newton	39,806	U. G. Wheeler.
North Adams	22,019	B. J. Merriam.
Northampton	19,431	F. K. Congdon.
North Andover	5,529	Dana P. Dame.
North Attleboro	9,562	G. W. Morris.
Northbridge	8,807	F. E. Holt.
North Brookfield	3,075	J. S. Hayes.
Norton	2,544	Ira A. Jenkins.
Norwood	8,014	C. O. Dalrymple.
Orange	5,282	J. S. McCann.
Oxford	3,361	C. C. Ferguson.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
MASSACHUSETTS—continued.		
Palmer	8,610	C. H. Hobson.
Peabody	15,721	Albert Robinson.
Pepperell	2,953	Geo. B. Clarke.
Pittsfield	32,121	John F. Gannon.
Plymouth	12,141	Charles A. Harris.
Provincetown	4,369	Chas. M. Pennell.
Quincy	32,642	
Randolph	4,301	(See Holbrook.)
Reading	5,818	A. L. Safford.
Revere	18,219	William C. McGinnis.
Rockland	6,928	L. O. Merrill.
Rockport	4,211	W. F. Eldredge.
Salem	43,697	Geo. M. Bemis.
Saugus	8,047	J. W. Lambert.
Somerset	2,798	O. H. Toothaker.
Somerville	77,236	C. S. Clark.
Southbridge	12,592	F. E. Corbin.
South Hadley	4,894	F. E. Whittemore.
Spencer	6,740	Irving H. Agard.
Springfield	88,926	J. H. Van Sickle.
Stoneham	7,090	A. B. Webber.
Stoughton	6,316	L. W. Robbins.
Sutton (P. O. Auburn).	3,078	H. H. Pratt.
Swampscott	6,204	Harold F. Dow.
Taunton	34,259	C. G. Persons.
Templeton	3,756	A. M. Jones.
Tewksbury	3,750	(See Dracut.)
Uxbridge	4,671	C. L. Judkins.
Wakefield	11,404	W. B. Atwell.
Walpole	4,892	R. W. Westcott.
Waltham	27,834	C. N. Perkins.
Ware	8,774	Geo. W. Cox.
Wareham	4,102	C. W. Humphrey.
Warren	4,188	H. G. Patt.
Watertown	12,875	W. H. Price.
Webster	11,509	Wm. F. Sims.
Wellesley	5,413	S. M. Graves.
Westboro	5,446	Thos. S. Grindle.
Westfield	16,044	Chester D. Stiles.
Westford	2,851	H. C. Knight
Westport	2,928	Edw. L. Hill.
West Springfield	9,224	Carl Cotton.
Weymouth	12,895	Parker T. Pearson.
Whitman	7,292	E. T. Wyman.
Williamstown	3,708	A. J. Chidester.
Winchendon	5,678	A. R. Paull.
Winchester	9,309	J. R. Fausey.
Winthrop	10,132	F. A. Douglas.
Woburn	15,308	Geo. I. Clapp.
Worcester	145,986	H. S. Gruver.
MICHIGAN.		
Adrian	10,763	C. H. Griffey.
Albion	5,833	Don Harrington.
Allegan	3,419	A. R. Shirley.
Alma	2,757	J. W. Kelder.
Alpena	12,706	Geo. H. Curtis.
Ann Arbor	14,817	Leslie A. Butler.
Battle Creek	25,267	W. G. Coburn.
Bay City	45,166	Frank A. Gause.
Belding	4,119	S. J. Skinner.
Benton Harbor	9,185	Frank A. Jensen.
Bessemer	4,583	C. R. Cobb.
Big Rapids	4,519	D. A. Van Buskirk.
Boyne City	5,218	A. A. Metcalf.
Cadillac	8,375	G. A. McGee.
Calumet	32,845	E. J. Hall.
Charlotte	4,886	C. H. Carrick.
Cheboygan	6,859	Carl Titus.
Coldwater	5,945	Ira F. King.
Crystal Falls	3,775	W. D. Hill.
Detroit	465,766	Frank Cody.
Dowagiac	5,088	L. W. Stewart.
MICHIGAN—con.		
East Jordan	2,516	M. R. Keyworth.
Escanaba	13,194	W. E. Olds.
Flint	38,550	A. N. Cody.
Gladstone	4,211	E. J. Williams.
Grand Haven	5,856	Arthur Dondineau.
Grand Ledge	2,893	Jonas Sawdon.
Grand Rapids	112,571	W. A. Greeson.
Greenville	4,045	W. R. Booker.
Hamtramck	3,559	E. G. Van De Venter.
Hancock	8,981	H. A. Gilruth.
Hastings	4,383	Carleton E. Ehle.
Highland Park	4,120	T. J. Knapp.
Hillsdale	5,001	S. J. Gier.
Holland	10,490	E. E. Fell.
Houghton	5,113	A. O. Goodale.
Ionia	5,030	A. A. Rather.
Iron Mountain	9,216	M. B. Travis.
Ironwood	12,821	E. T. Duffield.
Ishpeming	12,448	C. L. Phelps.
Jackson	31,433	E. O. Marsh.
Kalamazoo	39,437	Ellis H. Drake.
Lansing	31,229	J. W. Sexton.
Lapeer	3,946	E. E. Irwin.
Ludington	9,132	H. E. Waits.
Manistee	12,381	A. G. Stead.
Manistique	4,722	T. W. Clemo.
Marine City	3,770	H. B. Thompson.
Marquette	11,503	W. M. Whitman.
Marshall	4,236	F. E. King.
Menominee	10,507	J. L. Silvernale.
Midland	2,527	J. J. Schafer.
Monroe	6,893	D. S. Spencer.
Mount Clemens	7,707	L. W. Fast.
Mount Pleasant	3,972	G. E. Ganiard.
Munising	2,952	A. M. Walsworth.
Muskegon	24,062	Paul C. Stetson.
Negaunee	8,460	E. D. Denison.
Niles	5,156	O. W. Haisley.
Norway	4,974	G. L. Greenawalt.
Onaway	2,702	Benjamin Klager.
Otsego	2,812	C. R. Johnson.
Owosso	9,639	O. H. Voelker.
Petoskey	4,778	P. G. Lamtz.
Pontiac	14,532	G. L. Jenner.
Port Huron	18,863	H. A. Davis.
River Rouge	4,163	A. McDonald.
Saginaw:		
East side	50,510	W. W. Warner.
West side		Harold Steele.
St. Clair	2,633	O. M. Misenar.
St. Johns	3,154	Frank P. Buck.
St. Joseph	5,936	E. P. Clarke.
Sault Ste. Marie	12,615	Geo. G. Malcolm.
South Haven	3,577	L. C. Mohr.
Sturgis	3,635	C. M. Ferner.
Three Rivers	5,072	F. W. Crawford.
Traverse City	12,115	Charles L. Poor.
Wyandotte	8,287	F. W. Frostic.
Ypsilanti	6,230	A. G. Erickson.
MINNESOTA.		
Albert Lea	6,192	C. W. Brown.
Alexandria	3,001	F. M. Yockey.
Anoka	3,972	O. E. Smith.
Austin	6,960	H. E. Wheeler.
Bemidji	5,099	R. O. Bagby.
Brainerd	8,526	W. C. Cobb.
Chisholm	7,684	J. P. Vaughan.
Cloquet	7,031	Peter Olesen.
Crookston	7,559	G. H. Sanberg.
Detroit	2,807	J. B. Hagen.
Duluth	78,466	R. A. Kent.
East Grand Forks	2,533	M. C. Hayes.
Ely	3,572	H. E. White.
Eveleth	7,036	J. V. Voorhees.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
MINNESOTA—con.		
Fairmont	2,958	D. S. Brainard.
Faribault	9,001	John Munroe.
Fergus Falls	6,887	W. O. Lippitt.
Hastings	3,983	E. A. Durbahn.
Hibbing	8,832	C. C. Alexander.
Lake City	3,142	M. H. Gullickson.
Little Falls	6,078	E. B. Bergquist.
Luverne	2,540	H. C. Bell.
Mankato	10,365	E. S. Selle.
Melrose	2,591	E. J. Sweeney.
Minneapolis	301,408	B. B. Jackson.
Montevideo	3,056	J. J. Bohlander.
Moorhead	4,840	M. L. Jacobson.
New Ulm	5,648	Arnold Gloor.
Northfield	3,265	M. P. Fobes.
Owatonna	5,658	John J. Skinner.
Red Wing	9,048	O. W. Herr.
Richfield (P. O. Minneapolis).	2,673	L. E. Warren.
Rochester	7,844	W. G. Bolcom.
St. Cloud	10,600	P. R. Spencer.
St. Paul	214,744	S. O. Hartwell.
St. Peter	4,176	Melville R. Davis.
South St. Paul	4,510	D. E. Hickey.
Staples	2,558	F. W. Lamson.
Stillwater	10,198	J. C. Davies.
Thief River Falls	3,714	W. A. Ziegler.
Two Harbors	4,990	C. E. Campton.
Virginia	10,473	E. T. Duffield.
Wabasha	2,622	Anton Fischer.
Waseca	3,054	S. C. Huffman.
West Minneapolis	3,022	R. J. Mayo.
West St. Paul	2,660	J. W. Klinker.
Willmar	4,135	Geo. O. Brohaugh.
Winona	18,583	R. B. Irons.
MISSISSIPPI.		
Aberdeen	3,708	E. S. Bowlus.
Bay St. Louis	3,388	T. E. Kellor.
Biloxi	8,049	C. Bennett.
Brookhaven	5,293	S. M. Byrd.
Canton	3,929	J. B. Myers.
Clarksdale	4,079	H. B. Heidelberg.
Collins	2,581	E. E. Allen.
Columbus	8,989	J. C. Meadows.
Corinth	5,020	M. E. Moffitt.
Greenville	9,610	E. E. Bass.
Greenwood	5,836	C. E. Saunders.
Grenada	2,814	John Rundle.
Gulfport	6,386	R. G. Butler.
Hattiesburg	11,733	F. B. Woodley.
Jackson	21,262	E. L. Bailey.
Laurel	8,465	R. H. Watkins.
McComb	6,237	Joseph E. Gibson.
Meridian	23,285	W. C. Williams.
Moss Point	3,054	W. M. Alexander.
Natchez	11,791	J. H. Owings.
Okolona	2,584	W. M. Cox.
Pascagoula	3,379	S. P. Walker.
Starkville	2,698	R. C. Morris.
Tupelo	3,881	Thomas P. Milam.
Vicksburg	20,814	J. P. Carr.
Water Valley	4,275	Guy D. Dean.
West Point	4,864	B. T. Schumpert.
Winona	2,512	Henry M. Frizell.
Yazoo City	6,796	R. L. Bedwell.
MISSOURI.		
Aurora	4,148	C. W. Anderson.
Boonville	4,252	C. E. Chrane.
Brookfield	5,749	L. V. Crookshank.
Butler	2,894	Chas. A. Lee.
Cameron	2,980	A. C. Gwinn.
Cape Girardeau	8,475	J. N. Crocker.
Carrollton	3,452	Geo. D. Dieterich.
MISSOURI—con.		
Carterville	4,539	H. L. Mott.
Carthage	9,483	W. C. Barnes.
Caruthersville	3,655	J. H. Goodin.
Charleston	3,144	H. L. Jones.
Chillicothe	6,265	A. L. Threlkeld.
Clinton	4,992	Arthur Lee.
Columbia	9,662	W. I. Oliver.
De Soto	4,721	T. Sanford Williams.
Eldorado Springs	2,503	C. P. Dickson.
Excelsior Springs	3,900	G. W. Diemer.
Farmington	2,613	W. L. Johns.
Fayette	2,586	O. F. Revercomb.
Festus	2,556	James Sutton.
Flat River	5,112	J. U. White.
Fredericktown	2,632	E. O. Wiley.
Fulton	5,228	J. T. Bush.
Hannibal	18,341	Livingstone McCartney.
Higginsville	2,628	D. W. Branam.
Independence	9,859	W. L. C. Palmer.
Jefferson City	11,850	W. M. Oakerson.
Joplin	32,073	Wm. T. Harris.
Kansas City	248,381	I. I. Cammack.
Kennett	3,033	A. R. Curry.
Kirksville	6,347	Charles Banks.
Kirkwood	4,171	E. H. Beumer.
Lexington	5,242	L. H. Bell.
Liberty	2,980	E. B. Street.
Louisiana	4,454	R. R. Rowley.
Macon	3,584	J. C. Bond.
Maplewood	4,976	J. Richmond.
Marceline	3,920	G. H. Merideth.
Marshall	4,869	W. M. Westbrook.
Maryville	4,762	L. E. Ziegler.
Mexico	5,939	L. B. Hawthorne.
Moberly	10,923	M. F. Beach.
Monett	4,177	Guy H. Capps.
Neosho	3,661	Charles Baldwin.
Nevada	7,176	C. F. Daugherty.
Poplar Bluff	6,916	G. W. Beswick.
Rich Hill	2,755	Emmitt Ellis.
Richmond	3,664	A. L. Dailey.
St. Charles	9,437	Joseph Herring.
St. Joseph	77,403	J. W. Thalman.
St. Louis	687,029	John W. Withers.
Sedalia	17,822	C. A. Greene.
Sikeston	3,327	Miles C. Thomas.
Slater	3,238	W. G. Pence.
Springfield	35,201	W. W. Thomas.
Trenton	5,656	O. G. Sanford.
Warrensburg	4,689	Edward Beatty.
Washington	3,670	F. H. Hoff.
Webb City	11,817	C. W. Oldham.
Webster Groves	7,080	Frank Hamsher.
Wellston	7,312	Ernest F. Bush.
West Plains	2,914	J. Will Pierce.
MONTANA.		
Anaconda	10,134	W. K. Dwyer.
Billings	10,031	Ward H. Nye.
Bozeman	5,107	R. J. Cunningham.
Butte	39,165	W. E. Maddock.
Deer Lodge	2,570	Owen D. Speer.
Great Falls	13,948	S. D. Largent.
Havre	3,624	Chas. P. Milne.
Helena	12,515	John Dietrich.
Kalispell	5,549	W. D. Swetland.
Lewistown	2,992	C. G. Manning.
Livingston	5,359	B. A. Winans.
Miles City	4,697	John A. Anderson.
Missoula	12,869	Ira B. Fee.
Red Lodge	4,860	Frank B. Bates.
NEBRASKA.		
Alliance	3,105	W. R. Pate.
Auburn	2,727	G. E. Heacock.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
NEBRASKA—con.		
Aurora	2,630	J. A. Doremus.
Beatrice	9,356	A. T. Stoddard.
Blair	2,584	W. H. Myers.
Chadron	2,687	T. R. Cramford.
Columbus	5,014	C. Ray Gates.
Fairbury	5,294	W. H. Morton.
Falls City	3,255	B. H. Groves.
Fremont	8,718	A. H. Waterhouse.
Grand Island	10,326	R. J. Barr.
Hastings	9,338	A. H. Staley.
Havelock	2,680	Frank F. Adams.
Holdredge	3,030	Dell Gibson.
Kearney	6,202	A. L. Caviness.
Lincoln	43,973	M. C. Lefler.
McCook	3,765	J. A. True.
Nebraska City	5,488	W. G. Brooks.
Norfolk	6,025	H. B. Simon.
North Platte	4,793	C. L. Littel.
Omaha	150,355	J. H. Beveridge.
Plattsmouth	4,287	Carl E. Pratt.
University Place	3,200	A. H. Dixon.
Wymore	2,613	E. M. Short.
York	6,235	A. W. Graham.
NEVADA.		
Goldfield	4,838	A. W. Armitage.
Reno	10,867	B. D. Billinghurst.
Sparks	2,500	C. H. Meeker.
Tonopah	3,900	Geo. L. Dilworth.
NEW HAMPSHIRE.		
Berlin	11,780	H. L. Moore.
Claremont	7,529	F. W. Jackson.
Concord	21,497	L. J. Rundlett.
Conway	3,413	L. M. Felch.
Derry	5,123	Chas. W. Cutts.
Dover	13,247	J. E. Wignot.
Exeter	4,897	Clifton A. Towle.
Farmington	2,621	F. U. Landman.
Franklin	6,132	George A. Keith.
Goffstown	2,579	H. L. Winslow.
Haverhill	3,498	Norman J. Page.
Keene	10,068	N. Leonard (grades). W. O. Smith (high school).
Laconia	10,183	John S. Gilman.
Lancaster	3,054	Eugene Tuttle.
Lebanon	5,718	H. Leslie Sawyer.
Littleton	4,069	Guy E. Speare.
Manchester	70,063	H. F. Taylor.
Milford	3,939	Harold C. Bales.
Nashua	26,005	Chas. H. Noyes.
Newmarket	3,348	J. O. Wellman.
Newport	3,765	W. H. S. Ellingwood.
Pembroke	3,062	H. S. Roberts.
Portsmouth	11,269	Wm. H. Slayton.
Rochester	8,868	Alfred W. Smith.
Somersworth	6,704	E. H. Leonard.
Walpole	2,668	Wm. J. English.
NEW JERSEY.		
Asbury Park	10,150	A. E. Kraybill.
Atlantic City	46,150	C. B. Boyer.
Bayonne	55,545	P. H. Smith.
Belleville	7,632	Geo. R. Gerard.
Bloomfield	15,070	George Morris.
Boonton	4,930	M. P. Reagle.
Bordentown	4,250	R. M. Oberholser.
Bound Brook	3,970	Louis D. Dlyo.
Bridgeton	14,209	D. C. Porter.
Burlington	8,336	Van H. Smith.
Camden	94,538	James E. Bryan.
Carlstadt	3,807	George Kintner.
Cliffside Park (P. O. Grantwood).	3,394	W. N. Drum.
NEW JERSEY—continued.		
Collingswood	4,795	H. J. Neal.
Dover	7,468	W. V. Singer.
East Newark	3,163	Thos. W. Hopkins.
East Orange	34,371	Edwin C. Broome.
East Rutherford	4,275	F. J. Ogle.
Edgewater	2,655	W. F. Conway.
Elizabeth	73,409	F. E. Emmons.
Englewood	9,924	W. J. White.
Flemington	2,693	Nelson C. Smith.
Fort Lee	4,472	Arthur E. Chase.
Freehold	3,233	W. M. Smith.
Garfield	10,213	W. H. Steegar.
Glen Ridge	3,260	D. G. Firman.
Gloucester	9,462	W. F. Burns.
Guttenberg	5,647	J. F. O'Toole.
Hackensack	14,050	W. E. Stark.
Hackettstown	2,715	C. H. Reagle.
Haddonfield	4,142	Fred A. Nims.
Haledon	2,560	Absalom Grundy.
Hammonton	5,088	N. C. Holdridge.
Harrison	14,498	James F. Prendergast.
Hawthorne	3,400	F. H. Thomas.
Hoboken	70,324	A. J. Demarest.
Irvington	11,877	R. L. Saunders.
Jersey City	267,779	Henry Snyder.
Kearny	18,659	Herman Dressel.
Keyport	3,554	W. E. Bilderback.
Lambertville	4,657	John H. Herring.
Little Ferry	2,541	Edward E. Gaige.
Lodi	4,138	Harold J. Adams.
Long Branch	13,298	Christopher Gregory.
Madison	4,658	Walter B. Davis.
Millville	12,451	F. J. Sickles.
Montclair	21,550	D. C. Bliss.
Morristown	12,507	J. Burton Wiley.
Newark	347,469	David B. Corson.
New Brunswick	23,388	Ira T. Chapman.
Newton	4,467	T. L. Brooks.
North Bergen	15,662	M. F. Husted.
North Plainfield	6,117	D. Fred Aungst.
Nutley	6,009	John R. Beachler.
Orange	29,630	W. B. Patrick.
Passaic	54,773	Fred S. Shepherd.
Paterson	125,600	John R. Wilson.
Perth Amboy	32,121	S. E. Shull.
Phillipsburg	13,903	J. W. Riddle.
Plainfield	20,550	H. M. Maxson.
Pleasantville	4,390	W. C. Sullivan.
Princeton	5,136	Mabel T. Vanderbilt
Prospect Park	2,719	Thos. L. Bump.
Rahway	9,337	W. F. Little.
Raritan	3,672	O. A. Fisher.
Red Bank	7,398	E. C. Gilland.
Ridgewood	5,416	I. W. Travell.
Roosevelt (P. O. Chrome).	5,786	B. V. Hermann.
Roselle	2,725	E. V. Walton.
Roselle Park (P. O. Elizabeth).	3,138	E. F. Smith.
Rutherford	7,045	C. A. Fetterly.
Salem	6,614	A. J. Dohner.
Secaucus	4,740	M. J. Pechtel.
Somerville	5,060	Wm. A. Ackerman.
South Amboy	7,007	O. O. Barr.
South Orange	6,014	H. W. Foster.
South River	4,772	W. S. Lesh.
Summit	7,500	H. A. Sprague.
Tenafly	2,756	R. S. Maugham.
Town of Union (P. O. Weehawken).	21,023	Luther N. Steele.
Trenton	96,815	Wm. J. Bickett.
Vineland	5,282	H. L. Reber.
Wallington	3,448	John M. Myers.
Washington	3,567	S. M. Tressler.
Weehawken	11,228	F. A. Balch.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
NEW JERSEY—continued.		
Westfield	6,420	C. A. Philhower.
West Hoboken	35,403	A. O. Smith.
West New York	13,560	H. W. Maxson.
West Orange	10,980	S. C. Strong.
Wharton	2,983	W. P. Curtis.
Woodbury	4,642	M. G. Thomas.
NEW MEXICO.		
Albuquerque	11,020	John Milne.
Clovis	3,255	E. W. Bowyer.
East Las Vegas	....	W. B. McFarland.
Las Cruces	3,836	D. F. R. Rice.
Las Vegas	3,755	Mrs. Lou Cobb.
Raton	4,539	L. C. Rhoads.
Roswell	6,172	D. N. Pope.
Santa Fe	5,072	Elbert C. Best.
Silver City	3,217	Lela A. Manville.
Tucumcari	2,526	U. O. Anderson.
NEW YORK.		
Albany	100,253	C. Edward Jones.
Albion	5,016	W. G. Carmer.
Amityville	2,517	George A. Brown.
Amsterdam	31,267	H. T. Morrow.
Auburn	34,668	H. D. Hervey.
Babylon	2,600	C. W. Armstrong.
Baldwinsville	3,099	H. E. Elden.
Ballston Spa	4,138	W. A. Andrews.
Batavia	11,613	E. A. Ladd.
Bath	3,884	Edgar A. Lewis.
Beacon	10,629	E. D. Hewes.
Binghamton	48,443	D. J. Kelly.
Brockport	3,579	E. S. Barclay.
Buffalo	423,715	E. C. Hartwell.
Canandaigua	7,217	Frank E. Fisk.
Canastota	3,247	E. G. Simmons.
Canton	2,701	S. C. Sumner.
Carthage	3,563	S. L. Howe.
Catskill	5,296	Edward D. Myers.
Clyde	2,695	A. H. Covell.
Cohoes	24,709	Edward Hayward.
Cold Spring	2,549	J. F. Freeborn.
Corning:		
District No. 9.	13,730	J. M. Foster.
District No. 13		A. M. Blodgett.
Cornwall	2,658	H. C. Woodworth.
Cortland	11,504	F. E. Smith.
Dansville	3,938	W. J. Braman.
Depew	3,921	John P. Sherrard.
Dobbs Ferry	3,455	B. M. Sheppard.
Dolgeville	2,685	Thos. G. Coffee.
Dunkirk	17,221	F. R. Darling.
East Aurora	2,781	Harry W. Mead.
East Syracuse	3,274	E. T. Hennessy.
Ellenville	3,114	E. C. Hocmer.
Elmira	37,176	Asher J. Jacoby.
Elmira Heights	2,732	J. E. Demorest.
Fairport	3,112	H. Claude Hardy.
Fort Edward	3,762	Franklin Barber.
Fort Plain	2,762	W. M. Pratt.
Frankfort	3,303	B. C. Van Ingen.
Fredonia	5,285	Wm. B. Blaisdell.
Freeport	4,836	G. F. Du Bois.
Fulton	10,480	J. R. Fangrieve.
Geneva	12,446	A. J. Merrell.
Glens Falls	15,243	Elbert W. Griffith.
Gloversville	20,642	James A. Estee.
Goshen	3,081	M. C. Smith.
Gouverneur	4,128	L. T. Wilcox.
Granville	3,920	R. E. Brown.
Green Island (P. O. Troy)	4,737	James Heatly.
Greenport	3,089	Oscar E. Swanson.
Hastings upon Hudson	4,552	H. H. Murphy.
NEW YORK—con.		
Haverstraw	5,669	L. O. Markham.
Hempstead	4,964	T. P. Calkins.
Herkimer	7,520	Loraine W. Bills.
Homer	2,695	A. W. Armitage
Hoosick Falls	5,532	Clyde L. Harvey.
Hornell	13,617	H. S. Dodge.
Hudson	11,417	C. S. Williams.
Hudson Falls	5,189	Geo. A. Ingalls.
Ilion	6,588	H. M. Schwartz.
Ithaca	14,802	F. D. Boyton.
Jamestown	31,297	M. J. Fletcher.
Johnson City	3,775	Frank M. Smith.
Johnstown	10,447	E. L. Ackley.
Kingston	25,908	M. J. Michael.
Lackawanna	14,549	A. H. Mathewson.
Lancaster	4,364	P. J. Zeilman.
Le Roy	3,771	E. B. Taylor.
Little Falls	12,273	E. D. Henry.
Lockport	17,970	Emmet Belknap.
Lowville	2,940	C. H. Atwood.
Lyons	4,460	W. H. Kinney.
Malone	6,467	H. H. Lamberton.
Mamaroneck	5,699	Arthur Z. Boothby.
Massena	2,951	D. Howard Naylor.
Mechanicsville	6,634	E. H. Burdick.
Medina	5,683	H. E. Brown.
Middletown	15,313	Jas. F. Tuthill.
Mount Kisco	2,802	Harold M. Jennings.
Mount Morris	2,782	Harrold J. Coon.
Mount Vernon	30,919	W. H. Holmes.
Newark	6,227	Arthur M. Croop.
Newburgh	27,805	George F. Hall.
New Rochelle	28,867	Albert Leonard.
New York	4,766,883	W. L. Ettinger.
Niagara Falls	30,445	J. B. Laidlaw.
North Tarrytown	5,421	Chas A. Benedict.
North Tonawanda	11,955	Delmer E. Batcheller.
Norwich	7,422	F. R. Wassung.
Nyack	4,619	H. J. Wightman.
Ogdensburg	15,933	F. C. Byrn.
Olean	14,743	W. C. Greenwalt.
Oneida	8,317	Daniel Keating.
Oneonta	9,491	Geo. J. Dann.
Ossining	11,480	Everett A. Barto.
Oswego	23,368	C. W. Richards.
Owego	4,633	I. S. Carroll.
Patchogue	3,824	Sheridan Linn.
Peekskill:		
District No. 7	15,245	Fred J. Bohlmann.
District No. 8		A. D. Dunbar.
Penn Yan	4,597	W. E. De Melt.
Perry	4,388	W. H. McClelland.
Plattsburg	11,138	G. M. Elmendorf.
Port Chester	12,809	Elmer S. Redman.
Port Jervis	9,564	A. H. Naylor.
Potsdam	4,036	R. T. Congdon.
Poughkeepsie	27,936	W. C. Moon.
Rensselaer	10,711	Walter L Clark.
Rochester	218,149	H. S. West.
Rockville Center	3,667	W. S. Covert.
Rome	20,497	G. R. Staley.
Rye	3,964	Geo. E. Webster.
Sag Harbor	3,408	Gilbert R. Lyon.
St. Johnsville	2,536	J. H. Leneker.
Salamanca	5,792	A. W. Fortune.
Saranac Lake	4,983	H. V. Littell.
Saratoga Springs	12,693	C. L. Mosher.
Saugerties	3,929	Edw. R. James.
Schenectady	72,826	E. R. Whitney.
Scotia	2,957	A. W. Miller.
Seneca Falls	6,588	F. J. Medden.
Sidney	2,507	Tallman C. Bookhout.
Silver Creek	2,512	W. H. Edwards.
Solvay	5,139	Roy B. Kelley.
Southampton	2,509	H. F. Sabine.
Suffern	2,663	A. P. Burroughs.
Syracuse	137,249	P. M. Hughes.
Tarrytown	5,600	L. V. Case.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
NEW YORK—con.		
Tonawanda	8,290	F. K. Sutley.
Troy:		
Union district Lansingburgh district.	76,813	Arvie Eldred. Neil K. White.
Tuckahoe	2,722	Carrie E. Begg.
Tupper Lake	3,067	L. E. Endersbee.
Utica	74,419	John A. DeCamp.
Walden	4,004	M. E. Townsend.
Walton	3,103	C. P. Wells.
Wappingers Falls	3,195	M. W. Lewis.
Warsaw	3,206	Herbert Preston.
Waterford	3,245	Earl P. Watkins.
Waterloo	3,931	A. H. Downey.
Watertown	26,730	F. S. Tisdale.
Watervliet	15,074	H. H. Lansing.
Watkins	2,817	John A. Beers.
Waverly	4,855	P. C. Meserve.
Wellsville	4,382	H. J. Steere.
Westfield	2,985	G. F. Dickson.
Whitehall	4,917	A. J. Laidlaw.
White Plains	15,949	J. W. Lumbard.
Yonkers	79,803	Charles E. Gorton.
NORTH CAROLINA.		
Asheville	18,762	W. L. Brooker.
Belhaven	2,863	J. I. Robinson.
Burlington	4,808	C. C. Haworth.
Charlotte	34,014	H. P. Harding.
Concord	8,715	A. S. Webb.
Durham	18,241	E. D. Pusey.
Edenton	2,789	Joe R. Nixon.
Elizabeth City	8,412	S. L. Sheep.
Fayetteville	7,045	W. S. Snipes.
Gastonia	5,759	Joe S. Wray.
Goldsboro	6,107	O. A. Hamilton.
Graham	2,504	M. E. Yount.
Greensboro	15,895	Frederick Archer.
Greenville	4,101	J. H. Rose.
Henderson	4,503	J. T. Alderman.
Hendersonville	2,818	A. W. Honeycutt.
Hickory	3,716	R. W. Carver.
High Point	9,525	W. M. Marr.
Kinston	6,995	K. R. Curtis.
Lenoir	3,364	Horace Sisk.
Lexington	4,163	J. H. Cowles.
Monroe	4,082	R. W. Allen.
Mooresville	3,400	J. O. Faulkner.
Morganton	2,712	Wythe F. Wampler.
Mount Airy	3,844	L. M. Epps.
Newbern	9,961	H. B. Smith.
Oxford	3,018	C. G. Credle.
Raleigh	19,218	Harry Howell.
Reidsville	4,828	P. H. Gwynn, jr.
Rocky Mount	8,051	R. M. Wilson.
Salisbury	7,153	T. W. Andrews.
Shelby	3,127	I. G. Griffin.
Statesville	4,599	D. M. Thompson.
Tarboro	4,129	R. F. Moseley.
Thomasville	3,877	J. N. Hauss.
Washington	6,211	Frank L. Ashley.
Wilmington	25,748	W. A. Graham.
Wilson	6,717	Charles L. Coon.
Winston-Salem	17,167	R. H. Latham.
NORTH DAKOTA.		
Bismarck	5,443	J. M. Martin.
Devils Lake	5,157	Nelson Sauvain.
Dickinson	3,678	P. S. Berg.
Fargo	14,331	Arthur Deamer.
Grand Forks	12,478	W. C. Stebbins.
Jamestown	4,358	Norman C. Koontz.
Mandan	3,873	C. L. Love.
Minot	6,188	L. A. White.
Valley City	4,606	G. W. Hanna.
Williston	3,124	G. A. McFarland.
OHIO.		
Akron	69,067	H. V. Hotchkiss.
Alliance	15,083	B. F. Stanton.
Ashland	6,795	J. A. McDowell
Ashtabula	18,266	H. C. Dieterich.
Athens	5,463	C. E. Stailey.
Barberton	9,410	U. L. Light.
Barnesville	4,233	W. A. Zaugg.
Bellaire	12,946	J. V. Nelson.
Bellefontaine	8,238	R. J. Kiefer.
Bellevue	5,209	C. M. Carrick.
Berea	2,609	H. B. Alberty.
Bowling Green	5,222	D. C. Bryant.
Bridgeport	3,974	S. A. Gillette.
Bryan	3,641	J. W. Wyandt.
Bucyrus	8,122	J. R. Patterson.
Byesville	3,156	W. H. Nicholson.
Cambridge	11,327	W. E. Arter.
Canton	50,217	Wilson Hawkins.
Celina	3,493	C. V. Sensenbaugh.
Chillicothe	14,508	Frank J. Prout.
Cincinnati	363,591	R. J. Condon.
Circleville	6,744	J. O. Eagleson.
Cleveland	560,663	R. M. Jones.
Cleveland Heights	2,955	J. W. McLane.
Clyde	2,815	A. J. Love.
Columbus	181,511	J. G. Collicott.
Conneaut	8,319	C. M. Dickey.
Coshocton	9,603	O. B. Clifton.
Crestline	3,807	E. W. Bell.
Crooksville	3,028	E. D. Bates.
Cuyahoga Falls	4,020	W. H. Richardson.
Dayton	116,577	Frank W. Miller.
Defiance	7,327	E. W. Howey.
Delaware	9,076	Wm. McK. Vance.
Delphos	5,038	Hugh R. Hick.
Dennison	4,008	W. H. Angel.
Dover	6,621	S. O. Mase.
East Cleveland	9,179	W. H. Kirk.
East Liverpool	20,387	F. P. Geiger.
East Palestine	3,537	A. D. Ladd.
East Youngstown	4,972	W. M. Coursen.
Eaton	3,187	John O'Leary.
Elmwood Place	3,423	W. S. Eversull.
Elyria	14,825	F. M. Shelton.
Findlay	14,858	I. F. Matteson.
Fostoria	9,597	F. H. Warren.
Franklin	2,659	G. H. Gerke.
Fremont	9,939	F. P. Timmons.
Galion	7,214	J. J. Phillips.
Gallipolis	5,560	W. G. Scarberry.
Girard	3,736	H. L. Cash.
Glouster	2,527	M. O. Davis.
Greenfield	4,228	F. R. Harris.
Greenville	6,237	Minor McCool.
Hamilton	35,279	Darrell Joyce.
Hillsboro	4,296	O. C. Jackson.
Ironton	13,147	Edward Q. Swan.
Jackson	5,468	J. E. Kinnison.
Kent	4,488	W. A. Walls.
Kenton	7,185	D. B. Clark.
Lakewood	15,181	C. P. Lynch.
Lancaster	13,093	J. R. Clements.
Lebanon	2,698	Claude A. Bruner.
Leetonia	2,665	H. S. Floyd.
Lima	30,508	J. E. Collins.
Lisbon	3,084	Wm. H. Geiger.
Lockland	3,439	A. L. Heer.
Logan	4,850	C. F. Ridgeley.
London	3,530	W. H. Rice.
Lorain	28,883	D. J. Boone.
Mansfield	20,768	H. H. Helter.
Marietta	12,923	B. O. Skinner.
Marion	18,232	Herbert R. McVay.
Martins Ferry	9,133	R. C. Maston.
Marysville	3,576	L. B. Demorest.
Massillon	13,879	L. E. York.
Medina	2,734	W. E. Conkle.
Miamisburg	4,271	H. V. Bear.

XII.—Superintendents of Public Schools in Cities and Towns—Continued.

City	Population census of 1910.	Superintendent or supervising principal.
OHIO—continued.		
Middleport	3,194	A. W. McKay.
Middletown	13,152	R. W. Solomon.
Mingo Junction	4,049	Frank Linton.
Montpelier	2,759	C. R. Dustin.
Mount Vernon	9,087	P. C. Zemer.
Napoleon	4,007	W. R. Ash.
Nelsonville	6,082	D. A. Ferree.
Newark	25,404	O. J. Barnes.
Newcomerstown	2,943	W. B. Hayes.
New Lexington	2,559	J. E. Way.
New Philadelphia	8,542	Charles F. Limbach.
Niles	8,361	S. L. Eby.
North Baltimore	2,503	A. J. B. Longsdorf.
Norwalk	7,858	C. C. Patterson.
Norwood	16,185	W. S. Cadman.
Oberlin	4,365	H. L. Rawdon.
Orrville	3,101	M. C. Avery.
Painesville	5,501	C. C. Underwood.
Piqua	13,388	Geo. C. Dietrich.
Pomeroy	4,023	C. T. Coates.
Port Clinton	3,007	Alonzo F. Myers.
Portsmouth	23,481	Frank Appel.
Ravenna	5,310	E. O. Trescott.
Reading	3,985	R. J. Lyon.
St. Bernard	5,002	J. L. Trisler.
St. Marys	5,732	C. C. McBroom.
Salem	8,943	John S. Alan.
Sandusky	19,989	Walter S. Edmund.
Shelby	4,903	W. H. Maurer.
Sidney	6,607	H. R. McVay.
Springfield	46,921	Geo. E. McCord.
Steubenville	22,391	R. L. Ervin.
Struthers	3,370	W. P. Moody.
Tiffin	11,894	Charles A. Krout.
Toledo	168,497	
Toronto	4,271	S. C. Dennis.
Troy	6,122	T. E. Hook.
Uhrichsville	4,751	H. B. Galbraith.
Upper Sandusky	3,779	E. H. Brown.
Urbana	7,739	I. M. Keyser.
Van Wert	7,157	H. L. Sullivan.
Wadsworth	3,073	A. W. Elliott.
Wapakoneta	5,349	C. C. Nardin.
Warren	11,081	H. B. Turner.
Washington C. H.	7,277	William McClain.
Wauseon	2,650	S. P. Johnson.
Wellston	6,875	S. H. Maharry.
Wellsville	7,769	A. D. Horton.
West Park	3,179	F. E. Reynolds.
Willard	2,950	W. C. Kramer.
Wilmington	4,491	E. P. West.
Woodsfield	2,502	S. M. Archer.
Wooster	6,136	G. C. Maurer.
Xenia	8,706	C. A. Waltz.
Youngstown	79,066	O. L. Reid.
Zanesville	28,026	F. C. Kirkendall.
OKLAHOMA.		
Ada	4,349	J. E. Hickman.
Altus	4,821	D. F. Cooley.
Alva	3,688	A. W. Fanning.
Anadarko	3,439	O. R. Harris.
Ardmore	8,618	C. W. Richards.
Bartlesville	6,181	F. W. Wenner.
Blackwell	3,266	A. J. Lovett.
Chickasha	10,320	T. T. Montgomery.
Claremore	2,866	A. W. Beavers.
Clinton	2,781	E. H. Homberger.
Coalgate	3,255	A. P. Lever.
Durant	5,330	Geo. C. Rorie.
Elk City	3,165	A. L. Richards.
El Reno	7,872	C. E. Grady.
Enid	13,799	E. D. Price.
Frederick	3,027	J. O. Shaw.
Guthrie	11,654	C. N. Peak.
Hartshorne	2,963	C. E. Fair.
OKLAHOMA—con.		
Hobart	3,845	F. A. Balyeat.
Hugo	4,582	M. P. Hammond.
Kingfisher	2,538	R. L. Clifton.
Krebs	2,884	W. A. Stackable.
Lawton	7,788	M. L. Cotton.
McAlester	12,954	W. G. Masterson.
Mangum	3,667	Wallace Emerson.
Miami	2,907	M. R. Floyd.
Muskogee	25,278	R. J. Tighe.
Norman	3,724	A. S. Faulkner.
Nowata	3,672	H. Clay Fisk.
Oklahoma	64,205	J. A. Whiteford.
Okmulgee	4,176	H. B. Bruner.
Pauls Valley	2,689	John T. Butcher.
Pawhuska	2,776	L. S. Stephens.
Perry	3,133	W. F. Shultz.
Ponca City	2,521	J. N. Hamilton.
Purcell	2,740	K. W. Harris.
Sapulpa	8,283	J. R. Barton.
Shawnee	12,474	H. G. Faust.
Stillwater	3,444	W. H. Bishop.
Sulphur	3,684	A. C. Floyd.
Tahlequah	2,891	W. T. Scott.
Tulsa	18,182	E. E. Oberholtzer.
Vinita	4,082	M. R. Floyd.
Wagoner	4,018	James O. Crook.
Waurika	2,928	J. W. Shipp.
Woodward	2,696	J. W. Tyler.
OREGON.		
Albany	4,275	C. W. Boetticher.
Ashland	5,020	G. A. Briscoe.
Astoria	9,599	Arthur C. Strange.
Baker	6,742	Prentiss Brown.
Corvallis	4,552	J. O. McLaughlin.
Eugene	9,009	E. F. Carleton.
Grants Pass	3,897	J. G. Imel.
Klamath Falls	2,758	J. Percy Wells.
La Grande	4,843	A. C. Hampton.
Marshfield	2,980	C. A. Howard.
Medford	8,840	Aubrey G. Smith.
Oregon City	4,287	R. W. Kirk.
Pendleton	4,460	H. E. Inlow.
Portland	207,214	D. A. Grout.
Roseburg	4,738	M. S. Hamm.
Salem	14,094	J. W. Todd.
The Dalles	4,880	R. L. Kirk.
PENNSYLVANIA.		
Allentown	51,913	H. W. Dodd.
Altoona	52,127	S. H. Layton.
Ambler	2,649	J. M. Fisher.
Ambridge	5,205	C. S. McVey.
Apollo	3,006	Geo. W. Craig.
Archbald	7,194	W. A. Kelly.
Ashland	6,855	Edw. W. Taylor.
Ashley	5,601	A. P. Cope.
Aspinwall	2,592	F. D. Kebock.
Athens	3,796	W. F. Yoder.
Austin	2,941	R. R. Merrill.
Avalon	4,317	S. Todd Perley.
Avoca	4,634	Chas. B. Webber.
Bangor	5,369	John W. Gruver.
Barnesboro	3,535	E. D. Ott.
Beaver	3,456	Jonas E. Wagner.
Beaver Falls	12,191	Floyd Atwell.
Bellefonte	4,145	Arthur H. Sloop.
Bellevue	6,323	T. E. Garber.
Berwick	5,357	J. Y. Shambach.
Bethlehem	32,810	James N. Muir.
Birdsboro	2,930	C. E. Cole.
Blairsville	3,572	H. E. Seville
Blakely (P. O. Peckville).	5,345	H. B. Anthony.
Bloomsburg	7,413	L. P. Sterner.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1919.	Superintendent or supervising principal.	City.	Population census of 1919.	Superintendent or supervising principal.
PENNSYLVANIA—continued.			PENNSYLVANIA—continued.		
Brackenridge	3,134	R. R. Anderson.	Glassport	5,540	J. S. Hart.
Braddock	19,357	T. G. McCleary.	Greensburg	13,012	T. S. March.
Bradford	14,544	J. F. Butterworth.	Greenville	5,909	G. B. Gerberich.
Bridgeport	3,960	H. E. James.	Grove City	3,674	H. M. B. Lehn.
Bristol	9,256	L. D. Baggs.	Hanover	7,057	A. J. English.
Brookville	3,003	C. E. Wilson.	Harrisburg	64,186	F. E. Downes.
Butler	20,728	J. A. Gibson.	Hazleton	30,167	D. A. Harman.
Canonsburg	3,891	F. W. McVay.	Hollidaysburg	3,734	H. J. Barrett.
Carbondale	17,040	Evan J. Lewis.	Homestead	18,713	Landis Tanger.
Carlisle	10,303	Jno. C. Wagner.	Honesdale	2,945	E. W. Burchfield.
Carnegie	10,009	T. J. George.	Huntingdon	6,861	E. R. Barclay.
Carrick (P. O. Pittsburgh).	6,117	W. H. Sprenkle.	Indiana	5,749	Ernest Work.
			Irwin	2,886	Samuel Fausold.
Catasaqua	5,250	H. J. Reinhard.	Jeannette	8,077	E. W. Long.
Chambersburg	11,800	U. L. Gordy.	Jenkintown	2,968	D. S. Barton.
Charleroi	9,615	T. L. Pollock.	Jermyn	3,158	H. H. Rounds.
Chester	38,537	Chas. A. Wagner.	Jersey Shore	5,381	J. G. Dundore.
Clairton	3,326	F. N. Frits.	Johnsonburg	4,334	S. M. Robb.
Clarion	2,612	C. A. Middleswarth.	Johnstown	55,482	H. J. Stockton.
Clearfield	6,851	Geo. E. Zerfoss.	Juniata	5,285	M. B. Wineland.
Clifton Heights	3,155	Sarah Edwards.	Kane	6,626	H. O. Dietrick.
Coaldale	5,154	J. E. Gildea.	Kingston	6,449	J. R. Merkel.
Coatesville	11,084	H. R. Vanderslice.	Kittanning	4,311	Clyde W. Cranmer.
Columbia	11,454	Wm. C. Sampson.	Knoxville	5,651	A. R. Gilbert.
Connellsville	12,845	Bela B. Smith.	Lancaster	47,227	H. B. Work.
Conshohocken	7,480	C. S. Hottenstein.	Lansdale	3,551	J. Walter Gapp.
Coplay	2,670	Wm. Shetlock.	Lansdowne	4,066	W. L. Philips.
Coraopolis	5,252	J. C. Werner.	Lansford	8,321	E. E. Kuntz.
Corry	5,991	Charles J. Naegle.	Larksville (P. O. Wilkes-Barre).	9,288	M. L. McCann.
Coudersport	3,100	L. G. Soper.			
Crafton	4,583	Calvin Bowman.	Latrobe	8,777	Chas. S. Miller.
Curwensville	2,549	R. A. Shields.	Lebanon	19,240	E. M. Balsbaugh.
Danville	7,517	D. N. Dieffenbacher.	Leechburg	3,624	S. M. Neagley.
Darby	6,305	Amos Chamberlain.	Lehighton	5,316	B. M. Shull.
Derry	2,954	James C. Bryson.	Lewisburg	3,081	Harry S. Bourne.
Dickson City	9,331	P. M. Brennan.	Lewistown	8,166	W. A. Hutchison.
Donora	8,174	T. M. Gilland.	Lockhaven	7,772	N. P. Benson.
Dorranceton (P O Wilkes-Barre).	4,046	C. B. Hanyen, Jr.	Luzerne	5,426	T. G. Osborne.
			Lykens	2,943	Chas. H. Auman.
Downingtown	3,326	A. B. Moyer.	McAdoo	3,389	A. T. O'Donnell.
Doylestown	3,304	Carmon Ross.	McDonald	2,543	N. G. Parke.
DuBois	12,623	T. T. Allen.	McKeesport	42,694	J. B. Richey.
Dunmore	17,615	C. F. Hoban.	McKees Rocks	14,702	T. K. Johnston.
Duquesne	15,727	C. H. Wolford.	Mahanoy City	15,936	Harry A. Oday.
Duryea	7,487	F. J. Regan.	Mauch Chunk	3,952	E. P. Heckert.
East Conemaugh	5,046	J. M. Uhler.	Mayfield	3,662	Anna L. McCarthy.
East Mauch Chunk	3,548	M. E. Reifsnyder, (high school). T. L. Jenkins (grades)	Meadville	12,780	W. W. Irwin.
			Mechanicsburg	4,469	Ralph Jacoby.
			Media	3,562	W. H. Micheals.
Easton	28,523	R. E. Laramy.	Meyersdale	3,741	W. H. Kretchman.
East Pittsburgh	5,615	M. C. Harner.	Middletown	5,374	H. J. Wickey.
East Stroudsburg	3,330	Chas. A. Goss.	Millvale	7,861	C. C. Williamson.
Edgewood	2,596	Frank H. Remaley.	Milton	7,460	C. L. Millward.
Edwardsville (P. O. Wilkes-Barre)	8,407	J. O. Herman.	Miners Mills (P. O. Wilkes-Barre).	3,159	M. A. Toole.
Elizabethtown	2,587	E. U. Aumiller.	Minersville	7,240	C. E. Roudabush.
Elwood City	3,902	C. F. Becker.	Monaca	3,376	Geo. L. Hayes.
Emaus	3,501	H. J. Yeager.	Monessen	11,775	H. E. Gress.
Emporium	2,916	R. W. Clawges.	Monongahela	7,598	R. G. Dean.
Ephrata	3,192	H. E. Gehman.	Moosic	3,964	C. E. Drumm.
Erie	66,525	I. B. Bush.	Mount Carmel	17,532	W. M. Yeingst.
Etna (P. O. Pittsburgh).	5,830	E. S. Rice.	Mount Oliver	4,241	Minnie Ubinger.
			Mount Pleasant	5,812	H. H. De Long.
Exeter (P. O. Pittston).	3,537	Elizabeth Dougher.	Mount Union	3,338	W. P. Harley.
			Munhall	5,185	C. R. Stone.
Farrell	10,190	Port Eckles.	Nanticoke	18,877	A. P. Diffendafer.
Ford City	4,850	Ray D. Welch.	Nazareth	3,978	F. A. Marcks.
Forest City	5,749	E. E. Jones.	New Brighton	8,329	S. W. Lyons.
Frackville	3,118	W. R. Trautman.	New Castle	36,280	Ben G. Graham.
Franklin	9,767	C. E. Carter.	New Kensington	7,707	Berlin Empfield.
Freedom	3,060	F. A. Barkley.	Norristown	27,875	A. S. Martin.
Freeland	6,197	N. P. Luckenbill.	Northampton	8,729	W. D. Landis.
Galeton	4,027	G. A. Retan	North Braddock	11,824	H. G. Means.
Gallitzin	3,504	R. H. Biter.	North East	2,672	W. J. McQuiston.
Gettysburg	4,030	Helen L. Cope.	Northumberland	3,517	C. H. Fisher.
Gilberton	5,401	Cornelius A. Burke.	Oakmont	3,436	W. Lee Gilmore.
Girardville	4,396	A. F. Bubeck.	Oil City	15,657	James J. Palmer.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
PENNSYLVANIA—continued.		
Old Forge	11,324	F. R. Coyne.
Olyphant	8,505	M. W. Cummings.
Parkesburg	2,522	L. L. Coil.
Parnassus	2,578	W. Ray Smith.
Parsons	4,338	E. A. Evans.
Patton	3,907	Wm. Bosserman.
Pen Argyl	3,967	W. E. Muth.
Perkasie	2,779	L. H. Wagenhorst.
Philadelphia	1,549,008	John P. Garber.
Philipsburg	3,585	R. J. Williams.
Phoenixville	10,743	Isaac Doughton.
Pitcairn	4,975	C. W. Peters.
Pittsburgh	533,905	W. M. Davidson.
Pittston	16,267	D. J. Cray.
Plymouth	16,996	S. L. Smith.
Portage	2,954	R. B. Beard.
Port Carbon	2,678	Ira A. Goss.
Pottstown	15,599	W. W. Rupert.
Pottsville	20,236	Geo. H. Weiss.
Punxsutawney	9,058	F. S. Jackson.
Quakertown	3,801	C. G. Leech.
Rankin (P. O. Braddock).	6,042	C. L. Wilson.
Reading	96,071	Charles S. Foos.
Renovo	4,621	F. A. Berkenstock.
Reynoldsville	3,189	M. H. Deardorff.
Ridgway	5,408	W. M. Peirce.
Rochester	5,903	S. R. Grimm.
Royersford	3,073	J. A. Uhland.
St. Clair (P. O. Mount Oliver).	5,640	Alice Melligan.
St. Clair (Schuylkill County).	6,455	T. G. Jones.
St. Marys	6,346	J. J. Lynch.
Sayre	6,426	L. E. DeLaney.
Schuylkill Haven.	4,747	E. C. Lavers.
Scottdale	5,456	J. Nevin Wangaman.
Scranton	129,867	S. E. Weber.
Sewickley	4,479	Geo. E. Mark.
Shamokin	19,588	Joseph Howerth.
Sharon	15,270	W. D. Gamble.
Sharpsburg	8,153	John J. Donovan.
Sharpsville	3,634	Wm. M. Johnston.
Shenandoah	25,774	J. W. Cooper.
Shippensburg	3,457	A. Lee Shulenberger.
Silver Creek	2,512	P. S. Canfield.
Slatington	4,454	J. W. Snyder.
Somerset	2,612	F. F. Foltz.
South Brownsville.	3,943	D. D. Watkins.
South Fork	4,592	Philip J. Lent.
South Williamsport.	3,734	A. B. Elder.
Spangler	2,700	T. J. Sullivan.
Spring City	2,880	W. E. De Turck.
Steelton	14,246	Chas. S. Davis.
Stroudsburg	4,379	Robert Brown, jr.
Summit Hill	4,209	E. T. McCready.
Sunbury	13,770	W. A. Geesey.
Susquehanna	3,478	James A. Bowles.
Swissvale	7,381	C. C. Kelso.
Swoyerville (P. O. Wilkes-Barre).	5,396	Joseph H. Finn.
Tamaqua	9,462	J. F. Derr.
Tarentum	7,414	A. D. Endsley.
Taylor	9,060	Wm. S. Robinson.
Throop	5,133	Jno. J. O'Hara.
Titusville	8,533	Henry Pease.
Towanda	4,281	E. A. Quackenbush.
Turtle Creek	4,995	W. A. Rodgers.
Tyrone	7,176	F. M. Haiston.
Union City	3,684	H. H. Denison.
Uniontown	13,344	J. H. Alleman.
Vandergrift	7,314	Chas. H. Omo.
Verona	2,849	U. G. Palmer.
Warren	11,080	R. T. Adams.
Washington	18,778	J. C. Stiers.
Waynesboro	7,199	J. C. McCullough.
Waynesburg	3,545	R. M. Archibald.
Weatherly	2,501	F. S. Noetling.
Wellsboro	3,183	Rock L. Butler.
West Chester	11,767	Addison L. Jones.
West Homestead (P. O. Homestead).	3,009	F. L. Rose.
West Newton	2,880	Claude Mitchell.
West Pittston	6,848	L. P. Bierly.
Wilkes-Barre	67,105	H. H. Zeiser.
Wilkinsburg	18,924	J. L. Allison.
Williamsport	31,860	Fred W. Robbins.
Williamstown	2,904	H. C. Snyder.
Wilmerding	6,133	Chas. W. Shaffer.
Windber	8,013	W. C. Crawford.
Winton	5,280	J. J. Judge.
Wyoming	3,010	John E. Piatt.
York	44,750	A. Wanner.
PHILIPPINE ISLANDS.		
Manila	234,400	L. B. Bewley.
RHODE ISLAND.		
Bristol	8,565	Wm. C. Hobbs.
Burrillville (P. O. Harrisville).	7,878	Joseph C. Sweeney.
Central Falls	22,754	R. K. Bennett.
Coventry	5,848	J. H. Bailey.
Cranston (P. O. Providence).	21,107	John K. Fenner.
Cumberland (P. O. Manville).	10,107	Irving C. Mitchell.
East Greenwich	3,420	I. C. Phillips.
East Providence	15,808	J. R. D. Oldham.
Johnston (P. O. Providence).	5,935	George F. Weston.
Lincoln (P. O. Lonsdale.)	9,825	John L. Smith.
Newport	27,149	H. W. Lull.
North Kingston	4,048	H. M. Walradt.
North Providence.	5,407	August Berau.
North Smithfield (P. O. Woonsocket).	2,699	E. L. Adams.
Pawtucket	51,622	Frank O. Draper.
Portsmouth	2,681	Isabella G. Chase.
Providence	224,326	Isaac O. Winslow.
Scituate	3,493	E. P. Colson.
Smithfield	2,739	Clovis W. Mitchell.
South Kingston	5,176	Wm. A. Brady.
Tiverton	4,032	Lewis M. Wager.
Warren	6,585	Leroy G. Staples.
Warwick	26,629	Wm. F. Miner.
Westerly	8,696	W. H. Bacon.
West Warwick	(5)	John F. Deering.
Woonsocket	38,125	W. A. Mowry.
SOUTH CAROLINA.		
Abbeville	4,459	J. D. Fulp.
Aiken	3,911	W. J. McGarity.

[5] Part of Warwick in 1910.

XII.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
SOUTH CAROLINA—continued.		
Anderson	9,654	E. C. McCants.
Bennettsville	2,646	K. D. Senn.
Camden	3,569	J. G. Richards, jr.
Charleston	58,833	A. B. Rhett.
Cheraw	2,873	J. K. McCown.
Chester	4,754	Myran E. Brockman.
Clinton	3,272	J. H. Witherspoon.
Columbia	26,319	Wm. H. Hand.
Darlington	3,789	J. C. Daniel.
Easley	2,983	J. V. McElveen.
Florence	7,057	W. L. Brooker.
Gaffney	4,767	W. C. Taylor.
Georgetown	5,530	Wm. C. Bynym.
Greenville	15,741	J. L. Mann.
Greenwood	6,614	W. E. Black.
Laurens	4,818	H. W. Gasque.
Marion	3,844	T. C. Easterling.
Newberry	5,028	O. B. Cannon.
Orangeburg	5,906	A. J. Thackston.
Rock Hill	7,216	R. C. Burts.
Spartanburg	17,517	Frank Evans.
Sumter	8,109	S. H. Edmunds.
Union	5,623	Davis Jeffries.
SOUTH DAKOTA.		
Aberdeen	10,753	J. T. Glenn.
Brookings	2,971	S. W. Johnson.
Deadwood	3,653	E. A. Hollister.
Huron	5,791	A. J. Lang.
Lead	8,392	O. G. Prichard.
Madison	3,137	C. E. Nickle.
Mitchell	6,515	J. C. Lindsey.
Pierre	3,656	R. E. Rawlins.
Rapid City	3,854	Amos Groethe.
Redfield	3,060	Carl M. Bair.
Sioux Falls	14,094	A. A. McDonald.
Watertown	7,010	T. A. Harmon.
Yankton	3,787	E. R. Edwards.
TENNESSEE.		
Bristol	7,148	R. B. Rubins.
Chattanooga	44,604	R. L. Jones.
Clarksville	8,548	A. J. Smith.
Cleveland	5,549	D. C. Arnold.
Columbia	5,754	R. L. Harris.
Covington	2,990	R. M. Lester.
Dyersburg	4,149	C. M. Walker.
Fayetteville	3,439	Geo. C. Simmons.
Franklin	2,924	A. J. Haun.
Harriman	3,061	D. S. Tanner.
Humboldt	3,446	H. H. Ellis.
Jackson	15,779	C. B. Ijams.
Johnson City	8,502	D. M. Andrews.
Knoxville	36,346	W. E. Miller.
Lafollette	2,816	P. W. Kerr.
Lebanon	3,659	W. Lee Harris.
Lenoir City	3,392	J. H. Jarvis.
Memphis	131,105	W. S. Jones.
Morristown	4,007	C. C. Sherrod.
Murfreesboro	4,679	J. C. Mitchell.
Nashville	110,364	H. C. Weber.
Paris	3,881	M. M. Phillips.
Pulaski	2,928	Annie L. Huff.
Rockwood	3,660	N. A. Steadman.
Shelbyville	2,869	Louis Wilhoite.
Tullahoma	3,049	Jno. W. Jamison.
Union City	4,389	F. E. Ranck.
TEXAS.		
Abilene	9,204	R. D. Green.
Amarillo	9,957	M. H. Duncan.
Austin	29,860	A. N. McCallum.
Ballinger	3,536	J. M. Skinner.
Bay City	3,156	B. F. Phelps.
TEXAS—contd.		
Beaumont	20,640	M. E. Moore.
Beeville	3,269	W. E. Madderra.
Belton	4,164	L. H. Hubbard.
Big Spring	4,102	A. W. Flaniken.
Bonham	4,844	H. D. Fillers.
Bowie	2,874	T. P. Walker.
Brady	2,669	N. A. Cleveland.
Brenham	4,718	Joseph C. Tucker.
Brownsville	10,517	Thomas J. Yoo.
Brownwood	6,967	Geo. W. Page.
Bryan	4,132	W. C. Lawson.
Calvert	2,579	D. R. Hibbetts.
Cameron	3,263	L. H. Kidd.
Childress	3,818	B. M. Harrison.
Cleburne	10,364	Emmett Brown.
Coleman	3,046	C. H. Hufford.
Comanche	2,756	J. B. Layne.
Commerce	2,818	A. L. Day.
Corpus Christi	8,222	R. T. Pritchett.
Corsicana	9,749	J. E. Blair.
Crockett	3,947	Donald McDonald.
Cuero	3,109	A. S. Bush.
Dalhart	2,580	James H. Hayes.
Dallas	92,104	J. F. Kimball.
Denison	13,632	F. B. Hughes.
Denton	4,732	W. T. Doggett.
Dublin	2,551	S. L. Wolfe.
Eagle Pass	3,536	G. B. M. Snyder.
El Paso	39,279	A. H. Hughey.
Ennis	5,669	J. D. Coghlan.
Fort Worth	73,312	M. H. Moore.
Gainesville	7,624	C. A. Puckett.
Galveston	36,981	John W. Hopkins.
Georgetown	3,096	M. A. Cannon.
Gonzales	3,139	K. A. Jones.
Greenville	8,850	L. C. Gee.
Hillsboro	6,115	W. T. Lofland.
Houston	85,784	P. W. Horn.
Jacksonville	2,875	A. O. Strother.
Jefferson	2,515	C. E. Farmer.
Laredo	14,855	L. J. Christen.
Lockhart	2,945	T. A. Fisher.
Longview	5,155	L. W. Morton.
Lufkin	2,749	I. A. Coston.
McKinney	4,714	J. S. Carlisle.
Marlin	3,878	A. C. Ferguson.
Marshall	11,452	J. P. Glasgow.
Mart	2,939	J. G. Toland.
Mexia	2,694	W. H. Butler.
Mineral Wells	3,950	R. A. Deen.
Mount Pleasant	3,137	P. E. Wallace.
Nacogdoches	3,369	R. F. Davis.
Navasota	3,284	L. G. Andrews.
New Braunfels	3,165	R. H. Marrs.
Orange	5,527	E. B. Stover.
Palestine	10,482	Bonner Frizzell.
Paris	11,269	J. G. Wooten.
Plainview	2,829	W. E. Patty.
Port Arthur	7,663	G. M. Sims.
Quanah	3,127	Irving Ball.
San Angelo	10,321	Felix E. Smith.
San Antonio	96,614	Jeremiah Rhodes.
San Marcos	4,071	E. M. Day.
Seguin	3,116	Joe F. Saegert.
Sherman	12,412	J. C. Pyle.
Smithville	3,167	L. W. Land.
Snyder	2,514	Claud V. Hall.
Stamford	3,902	N. S. Holland.
Stephenville	2,561	J. D. Bramlette.
Sulphur Springs	5,151	W. L. Willis.
Sweetwater	4,176	J. G. Chapman.
Taylor	5,314	J. E. Watts.
Teague	3,288	L. Notley.
Temple	10,993	W. W. Clement.
Terrell	7,050	B. H. Miller.
Texarkana	9,790	H. W. Stilwell.
Tyler	10,400	G. O. Clough.
Uvalde	3,998	A. W. Evans.

XII.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
TEXAS—contd.		
Vernon	3,195	B. F. Sisk.
Victoria	3,673	V. L. Griffin.
Waco	26,425	B. B. Cobb.
Waxahachie	6,205	G. B. Winn.
Weatherford	5,074	T. W. Stanley.
Wichita Falls	8,200	Leo Clark.
Yoakum	4,657	R. E. L. Adams.
UTAH.		
American Fork	2,797	P. M. Nielsen.
Bingham	2,881	Lars W. Nielsen.
Brigham	3,685	C. H. Skidmore.
Eureka	3,416	I. L. Williamson.
Lehi	2,964	Junius Banks.
Logan	7,522	Henry Peterson.
Murray	4,057	C. E. Gaufin.
Nephi	2,759	Ray Stewart.
Ogden	25,580	W. K. Hopkins.
Park City	3,439	J. L. Kearns.
Provo	8,925	H. A. Dixon.
Richfield	2,559	A. J. Ashman.
Salt Lake City	92,777	G. N. Child.
Spanish Fork	3,464	L. John Nuttall.
Springville	3,356	
Tooele	2,753	E. M. Reid.
VERMONT.		
Barre	10,734	Carroll H. White.
Barton	3,346	Clayton L. Erwin.
Bellows Falls		(See Rockingham.)
Bennington	8,698	D. W. McClelland.
Brandon	2,712	M. A. Sturtevant.
Brattleboro	7,541	Florence M. Wellman.
Burlington	20,468	M. D. Chittenden.
Derby	3,639	E. A. Hamilton.
Essex	2,714	Minnie E. Hays.
Fair Haven	3,095	W. H. Hosmer.
Hardwick	3,201	J. H. Fuller.
Hartford	4,179	Nelson J. Whitehill.
Lyndon	3,204	M. E. Daniels.
Middlebury	2,848	Arthur W. Eddy.
Montpelier	7,856	S. C. Hutchinson.
Morristown (P. O. Morrisville).	2,652	Carlton D. Howe.
Newport	3,684	Ernest A. Hamilton.
Northfield	3,226	Charles P. McKnight.
Poultney	3,644	(See Fair Haven.)
Proctor	2,871	K. J. Sheldon.
Randolph	3,191	G. W. Patterson.
Richford	2,907	Edwin F. Greene.
Rockingham (P. O. Bellows Falls.	6,207	
Rutland	13,546	D. B. Locke.
St. Albans	6,381	George S. Wright.
St. Johnsbury	8,098	C. C. Hitchcock.
Springfield	4,784	H. D. Casey.
Swanton	3,628	Homer E. Hunt.
Waterbury	3,273	M. W. Chaffee.
West Rutland	3,427	P. R. Leavenworth.
Winooski	4,520	Geo. R. Stackpole.
Woodstock	2,545	Evelyn L. Fuller.
VIRGINIA.		
Alexandria	15,329	W. H. Sweeney.
Bedford	2,508	J. L. Borden.
Big Stone Gap	2,590	H. L. Sulfridge.
Bristol	6,247	R. B. Bowers.
Buena Vista	3,245	J. P. McClues.
Charlottesville	6,765	J. G. Johnson.
Clifton Forge	5,748	R. C. Bowton.
Covington	4,234	J. G. Jeter.
Danville	19,020	F. H. Wheatley.
Farmville	2,971	Thos. J. McIlwaine.
VIRGINIA—contd.		
Fredericksburg	5,874	E. F. Birckhead.
Hampton	5,505	J. H. Brent.
Harrisonburg	4,879	W. H. Keister.
Lexington	2,931	Harrington Waddell.
Lynchburg	29,494	Edward C. Glass.
Marion	2,727	B. E. Copenhaver.
Martinsville	3,368	W. B. Gates.
Newport News	20,205	D. A. Dutrow.
Norfolk	67,452	R. A. Dobie.
Petersburg	24,127	F. M. Martin.
Portsmouth	33,190	H. A. Hunt.
Pulaski	4,807	J. C. Elliott.
Radford	4,202	J. P. Whitt.
Richmond	127,628	Albert H. Hill.
Roanoke	34,874	D. E. McQuilkin.
Salem	3,849	H. L. Webb.
South Boston	3,516	H. J. Watkins.
Staunton	10,604	G. L. H. Johnson.
Suffolk	7,008	John E. Martin.
Williamsburg	2,714	H. E. Bennett.
Winchester	5,864	F. E. Clerk.
Wytheville	3,054	John T. Wassom.
WASHINGTON.		
Aberdeen	13,660	Geo. B. Miller.
Anacortes	4,168	Robert M. Fulton.
Bellingham	24,298	D. E. Wiedman.
Bremerton	2,993	V. D. Goss.
Centralia	7,311	E. T. Robinson.
Chehalis	4,507	R. E. Cook.
Cle Elum	2,749	Eugene D. Merriman.
Colfax	2,783	J. O. Mattoon.
Ellensburg	4,209	H. B. Doolittle.
Everett	24,814	Arthur E. Wilson.
Hillyard	3,276	W. C. Arterburn.
Hoquiam	8,171	F. E. Schmidtke.
Olympia	6,996	Elmer L. Breckner.
Port Townsend	4,181	H. R. Taylor.
Pullman	2,602	Charles Henry.
Puyallup	4,544	Wm. G. Gambill.
Renton	2,740	F. S. Salisbury.
Roslyn	3,126	W. G. Whitfield.
Seattle	237,194	Frank B. Cooper.
Snohomish	3,244	C. W. Hodge.
South Bend	3,023	Geo. W. Murphy.
Spokane	104,402	Orville C. Pratt.
Tacoma	83,743	Wm. F. Geiger.
Vancouver	9,300	C. W. Shumway.
Walla Walla	19,364	W. M. Kern.
Wenatchee	4,050	G. M. Warren.
Yakima	14,082	A. C. Davis.
WEST VIRGINIA.		
Benwood	4,976	Floyd Hanifan.
Bluefield	11,188	E. C. Wade.
Charleston	22,996	Geo. S. Laidley.
Charles Town	2,662	Wright Denny.
Chester	3,184	Elmer E. Oldaker.
Clarksburg	9,201	J. A. Jackson.
Davis	2,615	W. R. Thacher.
Elkins	5,260	W. W. Trent.
Fairmont	9,711	Otis G. Wilson.
Grafton	7,563	L. W. Burns.
Hinton	3,656	J. S. Bonar.
Huntington	31,161	C. L. Wright.
Keyser	3,705	J. C. Sanders.
McMechen	2,921	Floyd Hanifan.
Mannington	2,672	J. H. Patterson.
Martinsburg	10,698	Wm. C. Morton.
Morgantown	9,150	R. C. Smith.
Moundsville	8,918	H. V. Merrick.
Parkersburg	17,842	H. E. Odgers.
Princeton	3,027	Wilferd McCutcheon.
Richwood	3,061	A. F. Shroyer.
Sistersville	2,684	R. B. Marston.

XII.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population census of 1910.	Superintendent or supervising principal.
WEST VIRGINIA—continued.		
Wellsburg	4,189	W. N. Beetham.
Wheeling	41,641	C. E. Githens.
Williamson	3,561	A. C. Davis.
WISCONSIN.		
Antigo	7,196	R. A. Brandt.
Appleton	16,773	Carrie E. Morgan.
Ashland	11,594	I. O. Hubbard.
Baraboo	6,324	A. C. Kingsford.
Beaver Dam	6,758	Geo. R. Ray.
Beloit	15,125	F. E. Converse.
Berlin	4,636	C. D. Lamberton.
Burlington	3,212	F. L. Witter.
Chippewa Falls	8,893	H. N. Goddard.
Columbus	2,523	John Dixon.
Cudahy	3,691	Jesse F. Cory.
De Pere	4,477	A. L. Simon.
Eau Claire	18,310	Wm. T. Darling.
Edgerton	2,513	Fred J. Holt.
Fond du Lac	18,797	R. W. Fairchild.
Fort Atkinson	3,877	E. H. Niles.
Grand Rapids	6,521	E. G. Doudna.
Green Bay	25,236	A. W. Burton.
Hartford	2,982	Geo. B. Haverson.
Hudson	2,810	D. T. John.
Janesville	13,894	H. H. Faust.
Jefferson	2,582	Earl C. MacInnis.
Kaukauna	4,717	Leo G. Schussman.
Kenosha	21,371	Mrs. Mary D. Bradford.
La Crosse	30,417	B. E. McCormick.
Lake Geneva	3,079	W. R. Rood.
Madison	25,531	Chas. S. Meek.
Manitowoc	13,027	E. W. Waite.
Marinette	14,610	P. F. Neverman.
Marshfield	5,783	Chester Newlun.
Menasha	6,081	O. H. Plenzke.
Menomonie	5,036	Will G. Ballentine.
Merrill	8,689	H. W. Kircher.
Milwaukee	373,857	Milton C. Potter.
Mineral Point	2,925	Arnold A. Vieth.
Monroe	4,410	L. R. Creutz.
Neenah	5,734	C. F. Hedges.
New London	3,383	David Newberry.
WISCONSIN—con.		
Oconomowoc	3,054	E. F. Strong.
Oconto	5,629	Henry E. Smith.
Oshkosh	33,062	M. N. MacIver.
Platteville	4,452	F. V. Powell.
Plymouth	3,094	C. A. Rubado.
Portage	5,440	Chas. C. Bishop.
Port Washington	3,792	N. G. Lentzner.
Prairie du Chien	3,149	Nicholas Gunderson.
Racine	38,002	F. M. Longanecker.
Reedsburg	2,615	A. B. Olson.
Rhinelander	5,637	W. P. Colburn.
Rice Lake	3,968	H. J. Steeps.
Richland Center	2,652	A. F. Caldwell.
Ripon	3,739	L. P. Goodrich.
Shawano	2,923	R. J. McMahon.
Sheboygan	26,398	J. G. Walvoord.
South Milwaukee	6,092	Fred W. Hein.
Sparta	3,973	Frank C. Bray.
Stanley	2,675	C. W. Dodge.
Stevens Point	8,692	H. C. Snyder.
Stoughton	4,761	C. J. Anderson.
Sturgeon Bay	4,262	E. C. Gotham.
Superior	40,384	J. G. Moore.
Tomah	3,419	W. E. Bush.
Tomahawk	2,907	Frederick Ek.
Two Rivers	4,850	Fred G. Bishop.
Washburn	3,830	C. E. Hulteen.
Watertown	8,829	Thomas J. Berto.
Waukesha	8,740	G. O. Banting.
Waupaca	2,789	R. E. Brasure.
Waupun	3,362	Larue F. Smith.
Wausau	16,560	Silas B. Tobey.
Wauwatosa	3,346	Philip A. Kolb.
West Allis	6,645	T. J. Jones.
Whitewater	3,224	A. R. Page.
WYOMING.		
Casper	2,639	A. A. Slade.
Cheyenne	11,320	A. S. Jessup.
Evanston	2,583	C. C. Voeller.
Laramie	8,237	L. C. Tidball, jr.
Rawlins	4,256	C. A. Anderson.
Rock Springs	5,778	O. C. Schwiering.
Sheridan	8.408	J. J. Early.

XIII.—BUSINESS MANAGERS OF PUBLIC SCHOOLS IN CITIES OF OVER 30,000 POPULATION.

City.	Business manager.
Mobile, Ala	Jno. W. Egan.
Little Rock, Ark	D. R. Fones.
Berkeley, Calif	M. C. James.
Los Angeles, Calif	W. E. Record.
Oakland, Calif	Lloyd D. Barzee.
Pasadena, Calif	N. G. Felker.
Sacramento, Calif	J. M. Higgins.
San Diego, Calif	Will Angier.[1]
Colorado Springs, Colo	T. J. Fox.
Pueblo, Colo.:	
District I	G. G. Robertson.
District 20	Mrs. Mary Rugenitz.
Bridgeport, Conn	John B. Wynkoop.
New Haven, Conn	Robert Hall.
Wilmington, Del	Howard Jester.[2]
Atlanta, Ga	R. C. Little.
Chicago, Ill	Charles J. Forsberg.
Decatur, Ill	Arthur Kinkade.
East St. Louis, Ill	F. L. Thrasher.
Peoria, Ill	C. A. Dille.
Quincy, Ill	C. E. Lane.
Rockford, Ill	E. L. Lagerquist.
Evansville, Ind	Arthur L. Fisher.
Fort Wayne, Ind	H. J. Collier, jr.
Indianapolis, Ind	George C. Hitt.
South Bend, Ind	Ed. Smith.
Terre Haute, Ind	F. J. Piepenbrink.
Cedar Rapids, Iowa	J. A. Motejl.
Davenport, Iowa	J. D. McCollister.
Des Moines, Iowa	George C. Garton.
Dubuque, Iowa	Leo Palen.
Sioux City, Iowa	H. C. Roberts.[2]
Kansas City, Kans	W. A. Seymour.[2]
Topeka, Kans	M. C. Holman.[2]
Wichita, Kans	J. L. Leland.
Covington, Ky	W. A. Shore.
Lexington, Ky	J. O. H. Simrall.
Louisville, Ky	Samuel D. Jones.
Newport, Ky	Emil Gerhardt.
New Orleans, La	Nicholas Bauer.
Portland, Me	Ernest F. Morong.
Baltimore, Md	John H. Roche.[2]
Boston, Mass	William T. Keough.
Cambridge, Mass	C. J. Church.
Fitchburg, Mass	N. C. Upham.
Lowell, Mass	Henry L. Williams.
Lynn, Mass	Ernest Stephens.
Newton, Mass	Celia M. Chase.[1]
Salem, Mass	David A. Roche.
Springfield, Mass	Fred L. Ward.
Worcester, Mass	Joseph Beals.
Bay City, Mich	Frank F. Price.
Calumet, Mich	J. W. Downing.
Detroit, Mich	Charles A. Gadd.
Flint, Mich	H. L. Hills.
Grand Rapids, Mich	H. N. Morrill.
Jackson, Mich	J. F. Forward.
Kalamazoo, Mich	H. W. Anderson.
Saginaw, Mich.:	
East side	E. C. Oscar.
West side	J. Southgate.
Duluth, Minn	A. C. Ringsred.
Minneapolis, Minn	Geo. F. Womrath.
St. Paul, Minn	K. F. Dreher.
Kansas City, Mo	J. B. Jackson.
St. Joseph, Mo	A. L. Loving.
St. Louis, Mo	Chas. P. Mason.[2]
Springfield, Mo	E. J. Hoffman.[2]
Lincoln, Nebr	J. G. Ludlam.[2]
Omaha, Nebr	W. T. Bourke.[2]
Bayonne, N. J	J. D. Boyd.
Camden, N. J	J. W. F. Bleakly.[2]
East Orange, N. J	Fred T. Dugan.
Elizabeth, N. J	Thos. F. Mackessy.
Hoboken, N. J	R. A. Marnell.
Jersey City, N. J	G. Fred Ege.[2]
Newark, N. J	Cephas I. Shirley.
Passaic, N. J	John F. Kelly.
Paterson, N. J	Jas. F. Dunphey.
Trenton, N. J	Wm. A. Poland.
West Hoboken, N. J	Alexis Benoist.
Binghamton, N. Y	C. F. Middlebrook.
Buffalo, N. Y	Chas. F. Reif.
Mount Vernon, N. Y	L. S. Roberts.
Rochester, N. Y	J. S. Mullan.
Schenectady, N. Y	Clarence Ogsbury.
Syracuse, N. Y	P. D. Cooney.
Troy, N. Y.:	
Union district	Wm. A. Dunne.
Lansingburgh district.	Geo. H. Bradshaw.
Utica, N. Y	E. O. Folsom.
Yonkers, N. Y	J. H. Claxton.
Charlotte, N. C	Jno. M. Wilson.
Akron, Ohio	C. M. Woodruff.
Cincinnati, Ohio	Chas. W. Handman.
Cleveland, Ohio	Frank G. Hogen.
Columbus, Ohio	E. B. MacFadden.
Dayton, Ohio	C. J. Schmidt.[2]
Springfield, Ohio	J. W. Deam.
Toledo, Ohio	Edwin M. Gee.
Youngstown, Ohio	S. R. Creps.
Oklahoma, Okla	J. S. Stearley.
Portland, Oreg	R. H. Thomas.
Allentown, Pa	T. P. Wenner.
Altoona, Pa	W. N. Decker.
Bethlehem, Pa	F. J. Wilt.
Erie, Pa	R. S. Scobell.
Harrisburg, Pa	D. D. Hammelbaugh.
Johnstown, Pa	Chas. H. Meyers.
Lancaster, Pa	R. M. Bolenius.
McKeesport, Pa	W. T. Norton.
New Castle, Pa	Hugh M. Marquis.
Philadelphia, Pa	Mahlon L. Savage.[3] William Dick.[2]
Reading, Pa	Oscar B. Heim.
Scranton, Pa	Geo. E. Haak.[3]
Wilkes-Barre, Pa	A. W. Moss.
Williamsport, Pa	H. A. Sterner.
York, Pa	D. N. Crider.
Providence, R. I	H. S. Dorchester.[1]
Charleston, S. C	Geo. C. Rogers.
Chattanooga, Tenn	F. B. Frazier.
Knoxville, Tenn	G. Scheitlin.
Memphis, Tenn	G. W. Garner.[2]
Nashville, Tenn	H. S. Van Deren.
Dallas, Tex	A. D. Fraser.
El Paso, Tex	R. Randolph, Jones.
Fort Worth, Tex	E. E. Edwards.
Galveston, Tex	Edwin Bruce.
Houston, Tex	R. M. Morgan.
San Antonio, Tex	Paul H. Scholz.
Salt Lake City, Utah	L. P. Judd.[1]
Portsmouth, Va	Nellie J. Simmons.
Richmond, Va	C. P. Walford.
Seattle, Wash	J. L. Moseley.[3]
Spokane, Wash	E. A. Thomas.
Tacoma, Wash	Thos. A. Spencer.
Huntington, W. Va	W. H. Lyons.
Wheeling, W. Va	Frank Stanton.
La Crosse, Wis	George Howe.
Milwaukee, Wis	Frank M. Harbach.
Oshkosh, Wis	E. G. Beardmore.
Racine, Wis	Joseph J. Moritz.
Superior, Wis	L. A. Nichols.

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[1] Purchasing agent.
[2] Secretary of board of education.
[3] Superintendent of supplies.

XIV.—CHIEF MEDICAL INSPECTORS OR SCHOOL HEALTH OFFICERS IN CITIES OF OVER 30,000 POPULATION.

City.	Chief medical inspector or school health officer.
Birmingham, Ala	Dr. J. S. McLester.
Mobile, Ala	Mattie Huston.[1]
Montgomery, Ala	Dr. W. A. McPhaul.
Little Rock, Ark	Dr. Ida J. Brooks.
Berkeley, Calif	Dr. Richard A. Bolt.
Los Angeles, Calif	Dr. Herbert F. True.
Oakland, Calif	Dr. Alvin Powell.
Pasadena, Calif	
San Diego, Calif	Dr. J. D. Webster.
San Francisco, Calif	Dr. T. D. Maher.
Colorado Springs, Colo	Dr. O. R. Gillett.
Pueblo, Colo.:	
District No. 1	Maude Rose.[1]
District No. 20	Elizabeth Hopkins.[1]
Bridgeport, Conn	Le Roy Wilkes.
Meriden, Conn	Dr. H. D. Lockwood. Dr. R. V. Quinlan.
New Britian, Conn	Dr. W. S. Lyon. Dr. Geo. H. Dalton. Dr. Frank Zwick.
New Haven, Conn	Dr. F. O. Wright.
New Haven (Westville district), Conn.	Dr. A. W. Marks.
Waterbury, Conn	Dr. C. W. S. Frost.
Wilmington, Del	Dr. B. H. Beeler.
Washington, D. C	Dr. J. A. Murphy.
Jacksonville, Fla	(2)
Tampa, Fla	Mrs. Thelka Flint.
Atlanta, Ga	Dr. J. P. Kennedy.
Augusta, Ga	Dr. H. J. Baker.
Chicago, Ill	Dr. J. D. Robertson.
Decatur, Ill	Miss G. Johnson.
East St. Louis, Ill	Dr. G. O. Hulick.
Joliet, Ill	Harriet Hurst.[1]
Peoria, Ill	Dr. F. M. Meixner.
Rockford, Ill	Dr. D. W. Day.
Springfield, Ill	Alice Dalbey.[1]
Evansville, Ind	Dr. Charles W. Hartloff.
Fort Wayne, Ind	Dr. Charles R. Dancer.
Indianapolis, Ind	Dr. William. A. Ocker.
South Bend, Ind	Rebecca Carr.[1]
Terre Haute, Ind	Dr. Z. T. Zaring.
Cedar Rapids, Iowa	Mary D. Gaston.[1]
Davenport, Iowa	Dr. P. H. Schroeder.
Des Moines, Iowa	Dr. Fred Moore.
Dubuque, Iowa	Mrs. M. S. James.
Sioux City, Iowa	Anna Fobes.[1]
Kansas City, Kans	Dr. L. B. Gloyne.
Topeka, Kans	Mrs. Mary Grover.
Wichita, Kans	Genevieve Lill.
Covington, Ky	Dr. James A. Ryan.
Lexington, Ky	Dr. George Wilson.
Louisville, Ky	Dr. T. H. Baker.
Newport, Ky	Dr. John Todd.
New Orleans, La	Dr. Edmund Moss.
Boston, Mass	Dr. William H. Devine.
Brockton, Mass	Dr. W. W. Fullerton.
Cambridge, Mass	Dr. J. M. Wadden.
Chelsea, Mass	Dr. Geo. B. Fenwick.
Fall River, Mass	Dr. Samuel B. Morriss.
Fitchburg, Mass	Dr. Eustace L. Fiske.
Haverhill, Mass	Dr. John F. Croston.
Holyoke, Mass	Dr. Harold E. Miner.
Lawrence, Mass	
Lowell, Mass	Dr. C. H. Baker.
Lynn, Mass	Dr. M. R. Donovan.
New Bedford, Mass	Dr. W. G. Kirschbaum.
Newton, Mass	Dr. Francis G. Curtis.
Pittsfield, Mass	(3)
Salem, Mass	Dr. G. E. Tucker.
Somerville, Mass	Dr. F. L. Morse.
Springfield, Mass	(3)
Taunton, Mass	Dr. F. A. Murphy.
Worcester, Mass	Dr. Thomas F. Kenney.
Bay City, Mich	Dr. F. S. Baird.
Detroit, Mich	Dr. Guy L. Connor.
Flint, Mich	Dr. Lafon Jones.
Grand Rapids, Mich	Dr. C. C. Slemmons.
Jackson, Mich	Dr. R. V. Brokaw.
Kalamazoo, Mich	Dr. F. Elizabeth Barrett.
Lansing, Mich	Dr. Jas. A. Humphrey.
Saginaw, Mich.:	
East Side	Helen Gibson.
West Side	Gertrude L. Reiman.
Duluth, Minn	Dr. L. E. Doolittle.
Minneapolis, Minn	Dr. F. E. Harrington.
St. Paul, Minn	Dr. E. A. Meyerding.
St. Joseph, Mo	Dr. H. De Lameter.
St. Louis, Mo	Dr. James Stewart.
Springfield, Mo	Dora Stacy.[1]
Butte, Mont	Margaret Murphy.[1]
Lincoln, Nebr	Dr. Katherine H. K. Wolfe.
Omaha, Nebr	Dr. E. T. Manning.
Manchester, N. H	Dr. George Sheehan.
Atlantic City, N. J	Dr. H. T. Harvey.
Bayonne, N. J	Chas. J. Larkey.
Camden, N. J	Dr. Henry H. Davis.
East Orange, N. J	Dr. W. L. Harrington. Dr. Emma O. Gantz.
Elizabeth, N. J	Dr. Jacob Reiner.
Hoboken, N. J	Dr. Joseph F. Londrigan.
Jersey City, N. J	Dr. H. H. Brinkerhoff.
Newark, N. J	Dr. Geo. J. Holmes.
Passaic, N. J	Dr. M. Joseph.
Paterson, N. J	Dr. L. R. Burnett.
Perth Amboy, N. J	Dr. Wm. H. McCormick. Dr. J. J. Mann.
Trenton, N. J	Dr. A. D. Hutchinson.
West Hoboken, N. J	Dr. Wm. Draesel.
Albany, N. Y	Dr. Clinton P. McCord.
Amsterdam, N. Y	Dr. E. H. Ormsbee.
Auburn, N. Y	Dr. W. A. Strohmenger.
Binghampton, N. Y	Effie Knowlton.
Buffalo, N. Y	Dr. Francis E. Fronczak.
Elmira, N. Y	Dr. John A. Bennett. Dr. H. W. Fudge.
Jamestown, N. Y	Dr. F. C. Purcell.
Mount Vernon, N. Y	Dr. W. S. Woodruff.
Newburgh, N. Y	Dr. Emanuel L. Falk.
Niagara Falls, N. Y	Dr. Walter A. Scott.
Rochester, N. Y	Dr. George Goler.
Schenectady, N. Y	Dr. John E. Burke.
Syracuse, N. Y	Dr. Joseph C. Palmer.
Troy, N. Y.:	
Lansingburgh District.	Dr. Charles B. Sprague.
Union District	Dr. W. J. Fleming.
Utica, N. Y	Dr. J. W. Fleming.
Yonkers, N. Y	Dr. Philip S. McCormick.
Charlotte, N. C	
Akron, Ohio	Dr. T. C. Nisbett.
Canton, Ohio	Dr. E. A. Peterson.
Cincinnati, Ohio	Dr. Wm. Peters.
Cleveland, Ohio	Dr. L. W. Childs.
Columbus, Ohio	
Dayton, Ohio	Dr. Louis F. Bucher.
Hamilton, Ohio	Dr. J. A. Burnett.
Springfield, Ohio	Dr. D. W. Hogue.
Toledo, Ohio	Dr. P. Bruce Brockway.
Youngstown, Ohio	Dr. Charles B. Lewis.
Oklahoma, Okla	Dr. H. H. Cloudman.
Portland, Oreg	Dr. Geo. Parrish.
Allentown, Pa	Dr. C. C. Rogers.
Altoona, Pa	Dr. L. E. McKee. Dr. Sarah M. Davies. Dr. Ernest Hoover.
Bethlehem, Pa	Dr. R. J. Yost.
Chester, Pa	Dr. Geo. L. Armitage.
Erie, Pa	Dr. H. R. Steadman.
Harrisburg, Pa	Dr. Geo. B. Stull.

[1] Nurse.
[2] City health officer.
[3] Board of health has charge.

XIV.—CHIEF MEDICAL INSPECTORS OR SCHOOL HEALTH OFFICERS IN CITIES OF OVER 30,000 POPULATION—Continued.

City.	Chief medical inspector or school health officer.	City.	Chief medical inspector or school health officer.
Hazleton, Pa	Dr. P. E. Fagan.	Nashville, Tenn	Dr. E. L. Roberts.
Johnstown, Pa	Dr. J. W. Bancroft. Dr. J. S. Taylor.	El Paso, Tex	Dr. G. H. Higgins.
		Fort Worth, Tex	Victor E. Bonnelli.
Lancaster, Pa	Dr. W. D. Blankenship. Dr. D. E. Carey.	Galveston, Tex	Dr. Boyd Reading.
		Houston, Tex	Dr. F. J. Slataper.
McKeesport, Pa	Dr. A. T. Zeller.	San Antonio, Tex	Dr. Frank Paschal, jr.
New Castle, Pa	D. V. C. Wagner.	Salt Lake City, Utah	Dr. S. G. Paul.
Philadelphia, Pa	Dr. Walter S. Cornell.	Norfolk, Va	Dr. P. S. Schenck.
Pittsburgh, Pa	Dr. Harry B. Burns.	Portsmouth, Va	Dr. E. A. Hatton.
Reading, Pa	Dr. Hiester Bucher.	Richmond, Va	Dr. N. T. Emmett.
Scranton, Pa	Dr. W. E. Keller.	Roanoke, Va	Dr. Littleton Davis.
Wilkes-Barre, Pa	Dr. G. R. Andreas.	Seattle, Wash	Dr. Ira C. Brown.
Williamsport, Pa	Dr. F. W. Kunkle.	Spokane, Wash	Dr. J. E. Drake.
York, Pa	Dr. Gibson Smith.	Tacoma, Wash	Dr. E. A. Layton.
Pawtucket, R. I	Dr. Charles H. French.	Huntington, W. Va	Dr. A. W. Adkins.
Providence, R. I	Dr. C. V. Chapin. Dr. Ellen Stone.	Wheeling, W. Va	Dr. C. H. Keesor.
		La Crosse, Wis	Dr. W. W. Armstrong.
Woonsocket, R. I	Dr. W. F. Barry.	Milwaukee, Wis	Dr. G. P. Barth.
Chattanooga, Tenn	Dr. W. E. Anderson.	Oshkosh, Wis	J. F. Schneider.
Knoxville, Tenn	Dr. W. S. Austin.	Racine, Wis	Dr. W. W. Johnston.
Memphis, Tenn	Dr. J. J. Durrett.	Superior, Wis	Dr. H. A. Russell.

XV.—PRESIDENTS OF UNIVERSITIES AND COLLEGES.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
ALABAMA.			
Athens	Athens Female College	Women	Benjamin B. Glasgow, D. D.
Auburn	Alabama Polytechnic Institute	Coed	Spright Dowell, LL. D.
Birmingham	Birmingham-Southern College	Coed	Cullen C. Daniel, D. D.
Do	Howard College	Coed	Charles B. Williams, D. D.
Marion	Judson College	Women	Paul V. Bomar, D. D.
Do	Marion Institute	Men	Hopson O. Murfee, LL. D.
Montevallo	Alabama Technical Institute and College for Women.	Women	Thomas W. Palmer, LL. D.
Montgomery	Women's College of Alabama	Women	Mifflin W. Swartz, Ph. D.
St. Bernard	St. Bernard College	Men	Bernard Menges, O. S. B.
Spring Hill	Spring Hill College	Men	J. C. Kearns, S. J.
Talladega	Talladega College (colored)	Coed	F. A. Sumner, B. D.
University	University of Alabama	Coed	George H. Denny, LL.D.
ARIZONA.			
Tucson	University of Arizona	Coed	Rufus B. von Klein Smid, Sc. D.
ARKANSAS.			
Arkadelphia	Henderson-Brown College	Coed	James M. Workman, LL.D.
Do	Ouachita College	Coed	Charles E. Dicken, D. D.
Batesville	Arkansas College	Coed	Wm. S. Lacy, A. B.
Clarksville	Arkansas Cumberland College	Coed	Hubert S. Lyle, D. D.
Conway	Central College	Women	John W. Conger, LL. D.
Do	Hendrix College	Coed	Charles J. Greene, D. D.
Fayetteville	University of Arkansas	Coed	John C. Futrall, A. M.
CALIFORNIA.			
Berkeley	University of California [1]	Coed	David P. Barrows, LL. D.
Claremont	Pomona College	Coed	James A. Blaisdell, D. D.
Los Angeles	Occidental College	Coed	Silas Evans, LL. D.
Do	University of Southern California	Coed	George F. Bovard, LL. D.
Mills College	Mills College	Women	Aurelia H. Reinhardt, LL. D.
Oakland	St. Mary's College	Men	Brother Gregory, A. M.
Pasadena	California Institute of Technology	Men	
Redlands	University of Redlands	Coed	Victor L. Duke, LL. D.
St. Helena	Pacific Union College	Coed	Charles W. Irwin, A. M.
San Francisco	St. Ignatius University	Men	Pius L. Moore, S. J.
San Jose	College of the Pacific	Coed	Tully C. Knoles, D. D.
Santa Clara	University of Santa Clara	Men	T. L. Murphy, S. J.
Stanford University	Leland Stanford Junior University	Coed	Ray L. Wilbur, LL. D.
Whittier	Whittier College	Coed	Harry N. Wright, Ph. D.

[1] Southern Branch of University of California, Los Angeles, Ernest C. Moore, LL. D., director.

XV.—PRESIDENTS OF UNIVERSITIES AND COLLEGES—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
COLORADO.			
Boulder	University of Colorado	Coed	George Norlin, Ph. D.
Colorado Springs	Colorado College	Coed	Clyde A. Dunlway, LL. D.
Denver	College of the Sacred Heart	Men	
Do	Colorado Woman's College	Women	J. W. Bailey, Ph. D.
Do	University of Denver	Coed	
Fort Collins	Colorado Agricultural College	Coed	Chas. A. Lory, LL. D.
Golden	Colorado School of Mines	Men	Victor C. Alderson, LL. D.
Greeley	State Teachers College of Colorado.	Coed	John G. Crabbe, LL. D.
CONNECTICUT.			
Hartford	Trinity College	Men	Remsen B. Ogilby, A. M.
Middletown	Wesleyan University	Men	William A. Shanklin, LL. D.
New Haven	Yale University	Men	Arthur T. Hadley, LL. D.
New London	Connecticut College for Women	Women	Benjamin T. Marshall, A. M.
Storrs	Connecticut Agricultural College	Coed	Charles L. Beach, B. S.
DELAWARE.			
Newark	Delaware College	Coed	Walter Hullihen, Ph. D.
DISTRICT OF COLUMBIA.			
Washington	American University	Coed	John W. Hamilton, LL. D.
Do	Catholic Sisters College	Women	
Do	Catholic University of America	Men	Thomas J. Shahan, S. T. D., rector.
Do	Gallaudet College	Coed	Percival Hall, Litt. D.
Do	Georgetown University	Men	John B. Creeden, Ph. D.
Do	George Washington University	Coed	Wm. M. Collier, LL. D.
Do	Howard University (colored)	Coed	J. Stanley Durkee, Ph. D.
Do	Trinity College	Women	Sister Catherine Aloysius, A. B.
Washington (Takoma Park).	Washington Missionary College	Coed	Benjamin F. Machlan, A. M.
FLORIDA.			
Deland	John B. Stetson University	Coed	Lincoln Hulley, LL. D.
Gainesville	University of Florida	Men	Albert A. Murphree, LL. D.
Sutherland	Southern College	Coed	R. H. Alderman, A. B.
Tallahassee	Florida State College for Women	Women	Edward Conradi, Ph. D.
Winter Park	Rollins College	Coed	George M. Ward, LL. D.
GEORGIA.			
Athens	University of Georgia	Men	David C. Barrow, LL. D., chancellor.
Atlanta	Atlanta University (colored)	Coed	Edward T. Ware, A. B.
Do	Georgia School of Technology	Men	Kenneth G. Matheson, LL. D.
Do	Morehouse College (colored)	Men	John Hope, A. M.
Do	Morris Brown University (colored)	Coed	John H. Lewis, A. M.
Augusta	Paine College (colored)	Coed	Albert D. Betts, B. D.
College Park	Cox College	Women	Wm. S. Cox, B. Arch.
Dahlonega	North Georgia Agricultural College	Coed	Gustavus R. Glenn, LL. D.
Decatur	Agnes Scott College	Women	Frank H. Gaines, LL. D.
Demorest	Piedmont College	Coed	Frank E. Jenkins, D. D.
Emory University	Emory University	Men	Franklin N. Parker, D. D.
Forsyth	Bessie Tift College	Women	Joshua H. Foster, D. D.
Gainesville	Brenau College	Women	Haywood J. Pearce, Ph. D.
Lagrange	Lagrange College	Women	W. E. Thompson, A. B.
Macon	Mercer University	Men	Rufus W. Weaver, LL. D.
Do	Wesleyan College	Women	Wm. F. Quillian, A. B.
Oglethorpe University	Oglethorpe University	Men	Thornwell Jacobs, LL. D.
Rome	Shorter College	Women	A. W. Van Hoose, LL. D.
South Atlanta	Clark University (colored)	Coed	Harry A. King, D. D.
HAWAII.			
Honolulu	University of Hawaii	Coed	Arthur L. Dean, Ph. D.
IDAHO.			
Caldwell	College of Idaho	Coed	William J. Boone, D. D.
Moscow	University of Idaho	Coed	Alfred H. Upham, Ph. D.

XV.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
ILLINOIS.			
Abingdon	Hedding College	Coed	Clarence W. Green, Ph D.
Alton	Shurtleff College	Coed	George M. Potter, A. M.
Aurora	Aurora College	Coed	Orrin R. Jenks, D. D.
Bloomington	Illinois Wesleyan University	Coed	Theodore Kemp, LL. D.
Bourbonnais	St. Viator College	Men	W. J. Bergin, C. S. V.
Carthage	Carthage College	Coed	Harvey D. Hoover, Ph. D.
Chicago	Armour Institute of Technology	Men	Frank W. Gunsaulus, LL. D.
Do	De Paul University	Men	Thomas F. Levan, D. D.
Do	Lewis Institute	Coed	George N. Carman, A. M., director.
Do	Loyola University	Men	John B. Furay, S. J.
Do	University of Chicago	Coed	Harry Pratt Judson, LL. D.
Decatur	James Millikin University	Coed	Louis E. Holden, LL. D.
Eureka	Eureka College	Coed	L. O. Lehman, LL. D.
Evanston	Northwestern University	Coed	Walter D. Scott.
Ewing	Ewing College	Coed	Harvey A. Smoot, D. D.
Galesburg	Knox College	Coed	James L. McConaughy, Ph. D.
Do	Lombard College	Coed	Joseph M. Tilden, LL. D.
Greenville	Greenville College	Coed	Eldon Grant Burritt, A. M.
Jacksonville	Illinois College	Coed	Charles H. Rammelkamp, Ph.D.
Do	Illinois Woman's College	Women	Joseph R. Harker, LL. D.
Lake Forest	Lake Forest College	Coed	Henry W. Wright, Ph. D., acting.
Lebanon	McKendree College	Coed	George E. McCammon, D. D.
Lincoln	Lincoln College	Coed	A. E. Turner, LL. D.
Monmouth	Monmouth College	Coed	Thos. H. McMichael, D. D.
Naperville	Northwestern College	Coed	Edward E. Rall, Ph. D.
Peoria	Bradley Polytechnic Institute	Coed	Theodore C. Burgess, Ph. D.
Rockford	Rockford College	Women	Wm. A. Maddox, Ph. D.
Rock Island	Augustana College	Coed	Gustav A. Andreen, D. D.
Urbana	University of Illinois	Coed	David Kinley, LL. D.
Wheaton	Wheaton College	Coed	Charles A. Blanchard, D. D.
INDIANA.			
Bloomington	Indiana University	Coed	William L. Bryan, LL. D.
Crawfordsville	Wabash College	Men	Geo. Lewes Mackintosh, LL. D.
Earlham	Earlham College	Coed	David M. Edwards, Ph. D.
Evansville	Evansville College	Coed	Alfred F. Hughes, S. T. B.
Franklin	Franklin College	Coed	Charles E. Goodell, LL. D.
Goshen	Goshen College	Coed	Irvin R. Detweiler, A. B.
Greencastle	De Pauw University	Coed	Geo. R. Brose, LL. D.
Hanover	Hanover College	Coed	William A. Millis, LL. D.
Indianapolis	Butler College	Coed	J. W. Putnam, Ph. D., acting.
Do	Indiana Central University	Coed	Irby J. Good, A. M.
La Fayette	Purdue University	Coed	Winthrop E. Stone, LL. D.
Merom	Union Christian College	Coed	C. B. Hershey, D. D.
Notre Dame	St. Mary's College and Academy	Women	Mother M. Pauline.
Do	University of Notre Dame	Men	James A. Burns, C. S. C.
Oakland City	Oakland City College	Coed	Wm. P. Dearing, A. B.
Terre Haute	Rose Polytechnic Institute	Men	John White, Ph. D., acting.
Upland	Taylor University	Coed	Monroe Vayhinger, D. D.
Valparaiso	Valparaiso University	Coed	Henry K. Brown, A. M.
Vincennes	Vincennes University	Coed	William Halnon, A. M.
IOWA.			
Ames	Iowa State College of Agriculture and Mechanic Arts.	Coed	Raymond A. Pearson, LL. D.
Cedar Falls	Iowa State Teachers College	Coed	Homer H. Seerley, LL. D.
Cedar Rapids	Coe College	Coed	Harry M. Gage, LL. D.
Clinton	Wartburg College	Men	Otto L. Proehl, A. B.
Davenport	St. Ambrose College	Men	Wm. L. Hannon, A. M.
Decorah	Luther College	Men	Christian K. Preus, A. B.
Des Moines	Des Moines College	Coed	John A. Earl, D. D.
Do	Drake University	Coed	Arthur Holmes, Ph. D.
Dubuque	Columbia College	Men	John C. Stuart, S. T. L.
Do	University of Dubuque	Coed	Cornelius M. Steffens, D. D.
Do	Mount St. Joseph College	Women	Sister Mary Chionia.
Fairfield	Parsons College	Coed	R. A. Montgomery, LL. D.
Fayette	Upper Iowa University	Coed	Chauncy P. Colegrove, LL. D.
Grinnell	Grinnell College	Coed	John H. T. Main, LL. D.
Hopkinton	Lenox College	Coed	J. F. Hinkhouse, D. D.
Indianola	Simpson College	Coed	John L. Hillman, LL. D.
Iowa City	State University of Iowa	Coed	Walter A. Jessup, Ph. D.
Iowa Falls	Ellsworth College	Coed	Ido F. Meyer, A. M.
Mount Pleasant	Iowa Wesleyan College	Coed	U. S. Smith, D. D.

XV.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
IOWA—continued.			
Mount Vernon	Cornell College	Coed	Charles W. Flint, LL. D.
Oskaloosa	Penn College	Coed	Henry E. McGrew, D. D.
Pella	Central University of Iowa	Coed	Milton J. Hoffman, D. D.
Sioux City	Morningside College	Coed	Frank E. Mossman, D. D.
Storm Lake	Buena Vista College	Coed	Arthur M. Boyd, D. D.
Tabor	Tabor College	Coed	Nelson Wehrhan, D. D.
University Park	Central Holiness University	Coed	J. L. Brasher, D. D.
KANSAS.			
Atchison	St. Benedict's College	Men	Innocent Wolf, D. D.
Baldwin City	Baker University	Coed	Samuel A. Lough, LL. D.
Emporia	College of Emporia	Coed	Frederick W. Lewis, D. D.
Highland	Highland College	Coed	M. P. Smith, A. M.
Kansas City	Kansas City University	Coed	J. H. Lucas, LL. D., chancellor.
Lawrence	University of Kansas	Coed	Ernest H. Lindley, Ph. D.
Lindsborg	Bethany College	Coed	Ernst F. Pihlblad, D. D.
McPherson	McPherson College	Coed	Daniel W. Kurtz, D. D.
Manhattan	Kansas State Agricultural College	Coed	Wm. M. Jardine, LL. D.
Newton	Bethel College	Coed	John E. Hartzler, Ph. D.
Ottawa	Ottawa University	Coed	Silas E. Price, D. D.
St. Marys	St. Marys College	Men	William E. Cogley, S. J.
Salina	Kansas Wesleyan University	Coed	L. B. Bowers, D. D.
Sterling	Sterling College	Coed	Ross T. Campbell, D. D.
Topeka	Washburn College	Coed	Parley P. Womer, Sc. D.
Wichita	Fairmount College	Coed	Walter H. Rollins, D. D.
Do	Friends University	Coed	W. O. Mendenhall, Ph. D.
Winfield	Southwestern College	Coed	Albert E. Kirk, D. D.
KENTUCKY.			
Berea	Berea College	Coed	William C. Hutchins.
Bowling Green	Ogden College	Men	J. Howard Edgerton, A. B.
Danville	Centre College	Men	Wm. A. Ganfield, LL. D.
Georgetown	Georgetown College	Coed	Maldon B. Adams, LL. D.
Lexington	Transylvania College	Coed	Richard H. Crossfield, LL. D.
Do	University of Kentucky	Coed	Frank L. McVey, LL. D.
Louisville	University of Louisville	Coed	John Patterson, LL. D. dean.
Russellville	Bethel College	Coed	George F. Dasher, B. S.
St. Mary	St. Marys College	Men	Michael Jaglowicz, C. R.
Winchester	Kentucky Wesleyan College	Coed	Will B. Campbell, A. M.
LOUISIANA.			
Baton Rouge	Louisiana State University and Agricultural and Mechanical College.	Coed	Thomas D. Boyd, LL. D.
Clinton	Silliman Collegiate Institute	Women	U. B. Currie.
Convent	Jefferson College	Men	R. H. Smith, S. M.
New Orleans	H. Sophie Newcomb Memorial College.	Women	Pierce Butler, Ph. D., dean.
Do	Loyola University	Men	E. A. Cummings, S. J.
Do	Tulane University of Louisiana	Men	Albert B. Dinwiddie, LL. D.
Pineville	Louisiana College	Coed	C. Cottingham, LL. D.
MAINE.			
Brunswick	Bowdoin College	Men	Kenneth C. M. Sills, LL. D.
Lewiston	Bates College	Coed	Clifton D. Gray, Ph. D.
Orono	University of Maine	Coed	Robert J. Aley, LL. D.
Waterville	Colby College	Coed	Arthur J. Roberts, LL. D.
MARYLAND.			
Annapolis	St. John's College	Men	Thomas Fell, LL. D.
Do	United States Naval Academy	Men	Rear Adm. A. H. Scales, superintendent.
Baltimore	Goucher College	Women	Wm. W. Guth, LL. D.
Do	Johns Hopkins University	Coed	Frank J. Goodnow, LL. D.
Do	Morgan College (colored)	Coed	John O. Spencer, Ph. D.
Do	Mount St. Joseph's College	Men	Brother James, A. M.
Do	Notre Dame College of Maryland	Women	Sister Mary Florentine.
Chestertown	Washington College	Coed	Clarence P. Gould, Ph. D.
College Park	University of Maryland	Coed	Alfred F. Woods, D. Agr.
Ellicott City	Rock Hill College	Men	Brother E. Felix, A. M.
Emmitsburg	Mount St. Mary's College	Men	Bernard J. Bradley, LL. D.
Frederick	Hood College	Women	Joseph H. Apple, LL. D.
Lutherville	Maryland College for Women	Women	Beekman O. Rouse, A. B.
New Windsor	Blue Ridge College	Coed	Ross D. Murphy, A. B.
Westminster	Western Maryland College	Coed	Albert N. Ward, D. D.

XV.—PRESIDENTS OF UNIVERSITIES AND COLLEGES—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
MASSACHUSETTS.			
Amherst	Amherst College	Men	Alexander Meiklejohn, LL. D.
Do	Massachusetts Agricultural College	Coed	Kenyon L. Butterfield, LL. D.
Boston	Boston University	Coed	Lemuel H. Murlin, LL. D.
Do	Northeastern College	Men	Frank P. Speare.
Do	Simmons College	Women	Henry Lefavour, LL. D.
Cambridge	Harvard University	Men	Abbott Lawrence Lowell, LL. D.
Do	Massachusetts Institute of Technology.	Coed	Elihu Thompson, acting.
Do	Radcliffe College	Women	Le Baron R. Briggs, LL. D.
Chestnut Hill	Boston College	Men	William Devlin, S. J.
Lowell	Lowell Textile School	Coed	Chas. H. Eames, B. S.
Northampton	Smith College	Women	William A. Neilson, LL. D.
Norton	Wheaton College	Women	Samuel V. Cole, LL. D.
South Hadley	Mount Holyoke College	Women	Mary E. Woolley, LL. D.
Springfield	International Young Men's Christian Association College.	Men	Lawrence L. Daggett, D. D.
Tufts College	Tufts College	Coed	John A. Cousens, A. B.
Wellesley	Wellesley College	Women	Ellen F. Pendleton, LL. D.
Williamstown	Williams College	Men	Harry A. Garfield, LL. D.
Worcester	Clark University	Men	Wallace W. Atwood, Ph. D.
Do	College of the Holy Cross	Men	James J. Carlin, S. J.
Do	Worcester Polytechnic Institute	Men	Ira N. Hollis, Sc. D.
MICHIGAN.			
Adrian	Adrian College	Coed	Harlan L. Feeman, D. D.
Albion	Albion College	Coed	Samuel Dickie, LL. D.
Alma	Alma College	Coed	Harry Means Crooks, LL. D.
Ann Arbor	University of Michigan	Coed	Marion Le Roy Burton, LL. D.
Berrien Springs	Emmanuel Missionary College	Coed	Frederick Griggs, A. M.
Detroit	University of Detroit	Men	Wm. T. Doran, S. J.
East Lansing	Michigan Agricultural College	Coed	Frank S. Kedzie, Sc. D.
Hillsdale	Hillsdale College	Coed	Joseph W. Mauck, LL. D.
Holland	Hope College	Coed	Edward D. Dimment, L. H. D.
Houghton	Michigan College of Mines	Men	Fred W. McNair, Sc. D.
Kalamazoo	Kalamazoo College	Coed	Herbert L. Stetson, LL. D.
Olivet	Olivet College	Coed	Paul F. Voelker, Ph. D.
MINNESOTA.			
Collegeville	St. John's University	Men	Peter Engle, Ph. D.
Minneapolis	Augsburg Seminary	Men	George Sverdrup, M. A.
Do	University of Minnesota	Coed	Lotus D. Coffman, Ph. D.
Northfield	Carleton College	Coed	Donald J. Cowling, LL. D.
Do	St. Olaf College	Coed	Lars W. Boe, A. B.
St. Paul	College of St. Catherine	Women	Sister Antonia, A. M.
Do	College of St. Thomas	Men	Humphrey Moynihan, D. D.
Do	Hamline University	Coed	Samuel F. Kerfoot, D. D.
Do	Macalester College	Coed	Elmer A. Bess, D. D.
St. Peter	Gustavus Adolphus College	Coed	Oscar J. Johnson, B. D.
Winona	College of St. Teresa	Women	Mother M. Leo Tracy.
MISSISSIPPI.			
Agricultural College	Mississippi Agricultural and Mechanical College.	Coed	David C. Hull, M. Sc.
Blue Mountain	Blue Mountain College	Women	W. J. Lowrey, LL. D.
Brookhaven	Whitworth Female College	Women	I. W. Cooper, D. D.
Clinton	Mississippi College	Men	John W. Provine, LL. D.
Columbus	Mississippi State College for Women.	Women	J. C. Fant, Ph. D.
Grenada	Grenada College	Women	J. R. Countiss, A. B.
Holly Springs	Rust College (colored)	Coed	George Evans, D. D.
Jackson	Belhaven College	Women	W. H. Frazer, D. D.
Do	Millsaps College	Coed	Alexander F. Watkins, D. D.
Meridian	Meridian College	Coed	Z. J. Edge, D. D.
University	University of Mississippi	Coed	Joseph N. Powers, LL. D., chancellor.
MISSOURI.			
Cameron	Missouri Wesleyan College	Coed	Cameron Harmon, D. D.
Canton	Culver-Stockton College	Coed	John H. Wood, D. D.
Columbia	University of Missouri	Coed	Albert Ross Hill, LL. D.
Fayette	Central College	Coed	Paul H. Linn, D. D.
Fulton	Westminster College	Men	E. E. Reed, D. D.
Liberty	William Jewell College	Men	David J. Evans, Th. D.

XV.—PRESIDENTS OF UNIVERSITIES AND COLLEGES—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
MISSOURI—continued.			
Marshall	Missouri Valley College	Coed	Wm. H. Black, LL. D.
Parkville	Park College	Coed	Frederick W. Hawley, LL. D.
St. Louis	St. Louis University	Men	William F. Robison, S. J.
Do	Washington University	Coed	Frederic A. Hall, LL. D., chancellor.
Springfield	Drury College	Coed	Thomas W. Nadal, LL. D.
Tarkio	Tarkio College	Coed	Joseph A. Thompson, LL. D.
Warrenton	Central Wesleyan College	Coed	Otto E. Kriege, D. D.
MONTANA.			
Bozeman [1]	Montana State College of Agriculture and Mechanic Arts.	Coed	Alfred Atkinson, Sc. D.
Butte [1]	Montana State School of Mines	Coed	Charles H. Clapp, Ph. D.
Missoula [1]	Montana State University	Coed	Edward O. Sisson, Ph. D.
NEBRASKA.			
Bellevue	Bellevue College	Coed	Charles E. Baskerville, D. D.
Bethany	Cotner College	Coed	Andrew D. Harmon, A. M.
College View	Union College	Coed	Harry A. Morrison, A. M.
Crete	Doane College	Coed	John N. Bennett, LL. D.
Fremont	Midland College	Coed	Ezra E. Stauffer, D. D.
Grand Island	Grand Island College	Coed	Arthur T. Belknap, A. M.
Hastings	Hastings College	Coed	Calvin H. French, LL. D.
Lincoln	University of Nebraska	Coed	Samuel Avery, LL. D., chancellor.
Omaha	Creighton University	Men	John F. McCormick, S. J.
Do	University of Omaha	Coed	Daniel E. Jenkins, D. D.
University Place	Nebraska Wesleyan University	Coed	Isaac B. Schreckengast, S. T. B.
York	York College	Coed	H. U. Rook, Ph. D.
NEVADA.			
Reno	State University of Nevada	Coed	Walter E. Clark, LL. D.
NEW HAMPSHIRE.			
Durham	New Hampshire College of Agriculture and Mechanic Arts.	Coed	Ralph D. Hetzel, LL. D.
Hanover	Dartmouth College	Men	Ernest M. Hopkins, LL. D.
Manchester	St. Anselm's College	Men	Abbot Ernest, O. S. B.
NEW JERSEY.			
Convent Station	College of St. Elizabeth	Women	Sister Mary Pauline, LL. D.
Hoboken	Stevens Institute of Technology	Men	Alexander C. Humphreys, LL.D
Jersey City	St. Peter's College	Men	James F. McDermott, S. J.
Kenilworth	Upsala College	Coed	C. G. Erickson, B. D.
New Brunswick	Rutgers College	Men	Wm. H. S. Demarest, LL. D.
Princeton	Princeton University	Men	John Grier Hibben, LL. D.
South Orange	Seton Hall College	Men	Jas. F. Mooney, D. D.
NEW MEXICO.			
Albuquerque	University of New Mexico	Coed	David S. Hill, LL. D.
Socorro	New Mexico School of Mines	Coed	A. X. Illineki, Met. E.
State College	New Mexico College of Agriculture and Mechanic Arts.	Coed	Robert W. Clothier, Ph. D.
NEW YORK.			
Albany	New York State College for Teachers.	Coed	A. R. Brubacher, Ph. D.
Alfred	Alfred University	Coed	Boothe C. Davis, LL. D.
Annandale	St. Stephen's College	Men	Bernard I. Bell, S. T. B.
Aurora	Wells College	Women	Kerr D. Macmillan, S. T. D.
Brooklyn	Adelphi College	Women	Frank D. Blodgett, LL. D.
Do	College of St. Francis Xavier	Men	Joseph A. Farrell, S. J.
Do	Polytechnic Institute of Brooklyn.	Men	Fred. W. Atkinson, Ph. D.
Do	St. Francis College	Men	Brother Jarlath, O. S. F.
Do	St. John's College	Men	John W. Moore, LL. D.
Buffalo	Canisius College	Men	M. J. Ahern, S. J.
Do	D'Youville College	Women	Sister Verecunda.
Do	University of Buffalo	Coed	

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[1] The chief administrative officer of the University of Montana, which includes the State higher institutions, is the chancellor, Edward C. Elliott, Helena, Mont.

XV.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
NEW YORK—contd.			
Canton	St. Lawrence University	Coed	Richard E. Sykes, D. D.
Clinton	Hamilton College	Men	Frederick C. Ferry, LL. D.
Elmira	Elmira College	Women	Frederick Lent, Ph. D.
Geneva	Hobart College	Coed	Murray Bartlett, D. D.
Hamilton	Colgate University	Men	Melbourne S. Read, Ph. D.
Ithaca	Cornell University	Coed	Albert W. Smith, acting.
New Rochelle	College of New Rochelle	Women	Joseph F. Mooney, D. D.
New York	Barnard College	Women	Virginia C. Gildersleeve, Ph. D., dean.
Do	College of the City of New York	Men	Sidney E. Mezes, LL. D.
Do	Columbia University	Coed	Nicholas M. Butler, LL. D.
Do	Fordham University	Men	Edward P. Tivnan, S. J.
Do	Hunter College of the City of New York.	Women	George S. Davis, LL. D.
Do	Manhattan College	Men	Brother Jasper, A. M.
Do	New York University	Coed	Elmer Ellsworth Brown, LL. D., chancellor.
Do	Teachers College	Coed	James E. Russell, LL. D., dean.
Niagara University	Niagara University	Men	W. E. Katzenberger, C. M
Potsdam	Clarkson College of Technology	Men	John P. Brooks, Sc. D., director.
Poughkeepsie	Vassar College	Women	Henry N. MacCracken, LL. D.
Rochester	University of Rochester	Coed	Rush Rhees, LL. D.
St. Bonaventure	St. Bonaventure's College	Men	Alexander M. Hickey, Ph. D.
Schenectady	Union University	Men	Charles A. Richmond, LL. D.
Syracuse	New York State College of Forestry (at Syracuse University).	Men	Franklin Moon, M. F., dean.
Do	Syracuse University	Coed	James R. Day, LL. D., chancellor.
Troy	Rensselaer Polytechnic Institute	Men	Palmer C. Ricketts, LL. D.
Do	Russell Sage College	Women	Eliza Kellas, Ph. B.
West Point	United States Military Academy	Men	Brig. Gen. Douglas MacArthur, superintendent.
NORTH CAROLINA.			
Asheville	St. Genevieve's College and Academy.	Women	Mother M. L. Lorin.
Belmont	Belmont Abbey College	Men	Leo Haid, D. D.
Chapel Hill	University of North Carolina	Coed	Harry W. Chase, Ph. D.
Charlotte	Biddle University (colored)	Men	H. L. McCrorey, D. D.
Do	Queens College	Women	Henry C. Evans, D. D.
Davidson	Davidson College	Men	Wm. J. Martin, LL. D.
Durham	Trinity College	Coed	Wm. P. Few, LL. D.
Elon College	Elon College	Coed	Wm. A. Harper, LL. D.
Greensboro	Greensboro College for Women	Women	S. B. Turrentine, D. D.
Guilford College	Guilford College	Coed	Raymond Binford, Ph. D.
Hickory	Lenoir College	Coed	R. L. Fritz, D. D.
Raleigh	Meredith College	Women	Charles E. Brewer, LL. D.
Do	Shaw University (colored)	Coed	Joseph L. Peacock, A. M.
Red Springs	Flora Macdonald College	Women	C. G. Vardell, D. D.
Salisbury	Livingstone College (colored)	Coed	D. C. Suggs, Ph. D.
Wake Forest	Wake Forest College	Men	Wm. L. Poteat, LL. D.
West Raleigh	North Carolina State College of Agriculture and Engineering.	Men	W. C. Riddick, LL. D.
Wilson	Atlantic Christian College	Coed	H. S. Hilley, A. B.
Winston-Salem	Salem Academy and College	Women	Howard E. Rondthaler, D. D.
NORTH DAKOTA.			
Agricultural College	North Dakota Agricultural College.	Coed	
Fargo	Fargo College	Coed	E. Lee Howard, D. D.
Jamestown	Jamestown College	Coed	Barend H. Kroeze, D. D.
University	University of North Dakota	Coed	Thomas F. Kane, LL. D.
OHIO.			
Ada	Ohio Northern University	Coed	Albert E. Smith, D. D.
Akron	Municipal University of Akron	Coed	Parke R. Kolbe, Ph. D.
Alliance	Mount Union College	Coed	Wm. H. McMaster, D. D.
Ashland	Ashland College	Coed	Edwin E. Jacobs, Ph. D.
Athens	Ohio University	Coed	Edwin W. Chubb, Litt. D., acting.
Berea	Baldwin-Wallace College	Coed	Albert B. Storms, LL. D.
Bluffton	Bluffton College	Coed	Samuel K. Mosiman, Ph. D.
Cedarville	Cedarville College	Coed	Wilbert R. McChesney, D. D.
Cincinnati	St. Xavier College	Men	James McCabe, S. J.
Do	University of Cincinnati	Coed	Frederick C. Hicks, Ph. D.

XV.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
OHIO—continued.			
Cleveland	Case School of Applied Science	Men	Charles S. Howe, LL. D.
Do	St. Ignatius College	Men	Thomas J. Smith, A. M.
Do	Western Reserve University	Coed	Charles F. Thwing, LL. D.
Columbus	Capital University	Coed	Otto Mees, D. D.
Do	Ohio State University	Coed	Wm. O. Thompson, LL. D.
Dayton	St. Mary College	Men	Joseph A. Tetzlaff, D. D.
Defiance	Defiance College	Coed	Albert G. Caris, Litt. D.
Delaware	Ohio Wesleyan University	Coed	John W. Hoffman, LL. D.
Findlay	Findlay College	Coed	Wm. H. Guyer, D. D.
Gambier	Kenyon College	Men	Wm. F. Pierce, L. H. D.
Granville	Dension University	Coed	Clark W. Chamberlain, Ph. D.
Hiram	Hiram College	Coed	Miner Lee Bates, LL. D.
Marietta	Marietta College	Coed	Edwards S. Parsons, L. H. D.
New Athens	Franklin College	Coed	Will M. Hughes, D. D.
New Concord	Muskingum College	Coed	J. K. Montgomery, D. D.
Oberlin	Oberlin College	Coed	Henry C. King, LL. D.
Oxford	Miami University	Coed	Raymond M. Hughes, M. S.
Do	Oxford College for Women	Women	Eleanor N. Adams, Ph. D.
Do	Western College for Women	Women	W. W. Boyd, Pd. D.
Painesville	Lake Erie College	Women	Vivian Blanche Small, LL. D.
Rio Grande	Rio Grande College	Coed	Simeon H. Bing, A. M.
Springfield	Wittenberg College	Coed	Reese E. Tulloss, D. D.
Tiffin	Heidelberg University	Coed	Charles E. Miller, LL. D.
Toledo	St. John's University	Men	Francis X. Busch, S. J.
Do	Toledo University	Coed	A. Monroe Stowe, Ph. D.
Westerville	Otterbein College	Coed	Walter G. Clippinger, D. D.
Wilberforce	Wilberforce University (colored)	Coed	Wm. S. Scarborough, LL. D.
Wilmington	Wilmington College	Coed	J. Edwin Jay, A. M.
Wooster	College of Wooster	Coed	Charles F. Wishart, D. D.
Yellow Springs	Antioch College	Coed	George D. Black, D. D.
OKLAHOMA.			
Chickasha	Oklahoma College for Women	Women	G. W. Austin, B. S.
East End	Phillips University	Coed	Isaac N. McCash, LL. D.
Kingfisher	Kingfisher College	Coed	Henry W. Tuttle, D. D.
Norman	University of Oklahoma	Coed	Stratton D. Brooks, LL. D.
Oklahoma City	Oklahoma City College	Coed	Edwin G. Green, A. B.
Stillwater	Oklahoma Agricultural and Mechanical College.	Coed	James W. Cantwell, A. M.
Tulsa	Henry Kendall College	Coed	James M. Gordon, LL. D.
OREGON.			
Albany	Albany College	Coed	Alfred M. Williams, D. D.
Corvallis	Oregon Agricultural College	Coed	William J. Kerr, Sc. D.
Eugene	University of Oregon	Coed	Prince L. Campbell, LL. D.
Forest Grove	Pacific University	Coed	Robert F. Clark, A. M.
McMinnville	McMinnville College	Coed	Leonard W. Riley, D. D.
Newberg	Pacific College	Coed	John D. Mills, A. B.
Portland	Reed College	Coed	
Salem	Willamette University	Coed	Carl G. Doney, LL. D.
PENNSYLVANIA.			
Allentown	Cedar Crest College for Women	Women	Wm. F. Curtis, Litt. D.
Do	Muhlenberg College	Men	John A. W. Haas, LL. D.
Annville	Lebanon Valley College	Coed	George D. Gossard, D. D.
Beatty	St. Vincent College	Men	Leander Schnerr, D. D.
Beaver	Beaver College	Women	C. Mace Thomas, Ph. D.
Beaver Falls	Geneva College	Coed	Renwick H. Martin, D. D.
Bethlehem	Lehigh University	Men	Henry S. Drinker, LL. D.
Do	Moravian College	Men	J. Taylor Hamilton, D. D.
Do	Moravian Seminary and College for Women.	Women	John H. Clewell, Ph. D.
Bryn Mawr	Bryn Mawr College	Women	M. Carey Thomas, LL. D.
Carlisle	Dickinson College	Coed	James H. Morgan, LL. D.
Chambersburg	Wilson College	Women	Ethelbert D. Warfield, LL. D.
Chester	Pennsylvania Military College	Men	Chas. E. Hyatt, LL. D.
Collegeville	Ursinus College	Coed	George L. Omwake, Ph. D.
Easton	Lafayette College	Men	John H. MacCracken, LL. D.
Gettysburg	Pennsvylania College	Coed	William A. Granville, LL. D.
Greenville	Theil College	Coed	Henry W. Elson, Litt. D.
Grove City	Grove City College	Coed	Weir C. Ketler, A. M.
Haverford	Haverford College	Men	William W. Comfort, LL. D.
Hungtingdon	Juniata College	Coed	I. Harvey Brumbaugh, A. M.
Lancaster	Franklin and Marshall College	Men	Henry H. Apple, LL. D.
Lewisburg	Bucknell University	Coed	Emory W. Hunt, LL. D.

XV.—PRESIDENTS OF UNIVERSITIES AND COLLEGES—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
PENNSYLVANIA—con.			
Lincoln University	Lincoln University (colored)	Men	John B. Rendall, D. D.
Meadville	Allegheny College	Coed	Fred W. Hixson, LL. D.
Mechanicsburg	Irving Female College	Women	E. E. Campbell, Ph. D.
Myerstown	Albright College	Coed	L. Clarence Hunt, D. D.
New Wilmington	Westminister College	Coed	W. C. Wallace, D. D.
Philadelphia	Drexel Institute	Coed	Hollis Godfrey, Sc. D.
Do	Dropsie College	Coed	Cyrus Adler, Ph. D.
Do	La Salle College	Men	Brother Richard, A. M.
Do	St. Joseph's College	Men	Redmond J. Walsh, S. J.
Do	Temple University	Coed	Russell H. Conwell, LL. D.
Do	University of Pennsylvania	Coed	Josiah H. Penniman, LL. D.
Pittsburgh	Carnegie Institute of Technology	Coed	Arthur A. Hamerschlag, LL. D.
Do	Duquesne University of the Holy Ghost.	Men	Martin A. Hehir, LL. D.
Do	Pennsylvania College for Women	Women	John C. Acheson, LL. D.
Do	University of Pittsburgh	Coed	John G. Bowman, LL. D. chancellor.
Selinsgrove	Susquehanna University	Coed	Charles T. Aikens, D. D.
State College	Pennsylvania State College	Coed	
Swarthmore	Swarthmore College	Coed	
Villanova	Villanova College	Men	Francis A. Driscoll, O. S. A.
Washington	Washington and Jefferson College	Men	Samuel C. Black, LL. D.
Waynesburg	Waynesburg College	Coed	J. W. McKay, LL. D.
PORTO RICO.			
San Juan	University of Porto Rico	Coed	Paul G. Miller, Ph. D.
RHODE ISLAND.			
Kingston	Rhode Island State College	Coed	Howard Edwards, LL. D.
Providence	Brown University	Coed	W. H. P. Faunce, LL. D.
Do	Providence College	Men	Albert Casey, O. P.
SOUTH CAROLINA.			
Anderson	Anderson College	Women	John E. White, D. D.
Charleston	College of Charleston	Men	Harrison Randolph, LL. D.
Do	The Citadel, the Military College of South Carolina.	Men	Col. O. J. Bond, A. M., superintendent.
Clemson College	Clemson Agricultural College	Men	Walter M. Riggs, LL. D.
Clinton	Presbyterian College of South Carolina.	Coed	Davison McD. Douglas, D. D.
College Place	Columbia College	Women	G. T. Pugh, Ph. D.
Columbia	Benedict College (colored)	Coed	B. W. Valentine, A. M.
Do	Chicora College for Women	Women	S. C. Byrd, D. D.
Do	University of South Carolina	Coed	Wm. S. Currell, LL. D.
Due West	Erskine College	Coed	James S. Moffatt, D. D.
Do	Woman's College of Due West	Women	Richard L. Robinson, D. D.
Greenville	Furman University	Men	W. J. McGlothlin, D. D.
Do	Greenville Woman's College	Women	David M. Ramsey, D. D.
Greenwood	Lander College	Women	John O. Willson, D. D.
Hartsville	Coker College for Women	Women	E. W. Sikes, Ph. D.
Newberry	Newberry College	Coed	S. J. Derrick, A. M.
Spartanburg	Converse College	Women	Robert P. Pell, Litt. D.
Do	Wofford College	Men	Henry N. Snyder, LL. D.
SOUTH DAKOTA.			
Brookings	South Dakota State College of Agriculture and Mechanic Arts.	Coed	Willis E. Johnson, LL. D.
Huron	Huron College	Coed	
Mitchell	Dakota Wesleyan University	Coed	W. D. Schermerhorn, S. T. B.
Rapid City	State School of Mines	Coed	Cleophas C. O'Hara, Ph. D.
Sioux Falls	Sioux Falls College	Coed	V. C. Coulter, A. M.
Vermilion	University of South Dakota	Coed	Robert L. Slagle, Ph. D.
Yankton	Yankton College	Coed	Henry K. Warren, LL. D.
TENNESSEE.			
Bristol	King College	Men	Tikden Scherer, D. D.
Chattanooga	University of Chattanooga	Coed	
Clarksville	Southwestern Presbyterian University.	Men	Chas. E. Diehl, D. D.
Greenville	Tusculum College	Coed	Chas. O. Gray, D. D.
Harrogate	Lincoln Memorial University	Coed	George A. Hubbell, Ph. D.

XV.—PRESIDENTS OF UNIVERSITIES AND COLLEGES—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
TENNESSEE—contd.			
Jackson	Union University	Coed	Henry E. Watters, D. D.
Jefferson City	Carson and Newman College	Coed	Wm. L. Gentry, LL. D.
Knoxville	Knoxville College (colored)	Coed	J. K. Giffin, D. D.
Do	University of Tennessee	Coed	Harcourt A. Morgan, LL. D.
Lebanon	Cumberland University	Coed	A. B. Buchanan, D. D., acting.
McKenzie	Bethel College	Coed	N. J. Finney, A. M.
Maryville	Maryville College	Coed	Samuel T. Wilson, D. D.
Milligan	Milligan College	Coed	H. J. Derthick, A. M.
Murfreesboro	Tennessee College	Women	Geo. J. Burnett, A. M.
Nashville	Buford College	Women	Mrs. E. G. Buford.
Do	Fisk University (colored)	Coed	Fayette A. McKenzie, LL. D.
Do	George Peabody College for Teachers.	Coed	Bruce R. Payne, LL. D.
Do	Vanderbilt University	Coed	James H. Kirkland, LL. D., chancellor.
Sewanee	University of the South	Men	Albion W. Knight, D. D., vice chancellor.
Spencer	Burritt College	Coed	H. E. Scott, A. M.
Washington College	Washington College	Coed	
TEXAS.			
Abilene	Abilene Christian College	Coed	Jesse P. Sewell.
Do	Simmons College	Coed	Jefferson D. Sandefer, LL. D.
Austin	University of Texas	Coed	Robert E. Vinson, LL. D.
Belton	Baylor Female College	Women	John C. Hardy, LL. D.
Brownwood	Daniel Baker College	Coed	French W. Thompson.
Do	Howard Payne College	Coed	L. J. Mims, A. M.
College Station	Agricultural and Mechanical College of Texas.	Men	Wm. B. Bizzell, LL. D.
Dallas	University of Dallas	Men	Marshall F. Winne, Ph. D.
Do	Southern Methodist University	Coed	Hiram A. Boaz, D. D.
Denton	College of Industrial Arts	Women	Francis M. Bralley, A. B.
Fort Worth	Texas Christian University	Coed	E. M. Waits, LL. D.
Do	Texas Woman's College	Women	H. E. Stout.
Georgetown	Southwestern University	Coed	Charles M. Bishop, D. D.
Houston	Rice Institute	Coed	Edgar O. Lovett, LL. D.
Marshall	Bishop College (colored)	Coed	C. H. Maxson, B. S.
San Antonio	Our Lady of the Lake College	Women	H. A. Constantineau, D. D.
Do	St. Louis College	Men	James P. Canning, A. M.
Sherman	Austin College	Men	Thomas S. Clyce, LL. D.
Waco	Baylor University	Coed	Samuel P. Brooks, LL. D.
Waxahachie	Trinity University	Coed	Samuel Lee Hornbeak, LL. D.
UTAH.			
Logan	Agricultural College of Utah	Coed	Elmer G. Peterson, Ph. D.
Salt Lake City	University of Utah	Coed	John A. Widtsoe, LL. D.
VERMONT.			
Burlington	University of Vermont and State Agricultural College.	Coed	Guy W. Bailey, A. B.
Middlebury	Middlebury College	Coed	John Martin Thomas, LL. D.
Northfield	Norwich University	Men	Charles A. Plumley, A. M.
Winooski	St. Michael's College	Men	William Jeanmarie, S. S. E.
VIRGINIA.			
Ashland	Randolph-Macon College	Men	Robert E. Blackwell, LL. D.
Blacksburg	Virginia Agricultural and Mechanical College and Polytechnic Institute.	Men	Julian A. Burruss, A. M.
Bridgewater	Bridgewater College	Coed	Paul H. Bowman, D. D.
Charlottesville	University of Virginia	Coed	Edwin A. Alderman, LL. D.
Emory	Emory and Henry College	Coed	J. Stewart French.
Hampden-Sidney	Hampden-Sidney College	Men	Joseph D. Eggleston, LL. D.
Hollins	Hollins College	Women	Matty L. Cocke, Litt. D.
Lexington	Virginia Military Institute	Men	Edward W. Nichols, supt.
Do	Washington and Lee University	Men	Henry Louis Smith, LL. D.
Lynchburg	Randolph-Macon Woman's College	Women	Dice R. Anderson, Ph. D.
Do	Lynchburg College	Coed	J. T. T. Hundley, A. B.
Do	Virginia Theological Seminary and College (colored).	Coed	Robert C. Woods, D. D.

XV.—PRESIDENTS OF UNIVERSITIES AND COLLEGES—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
VIRGINIA—continued.			
Manassas	Easton College	Coed	Hervin U. Roop, LL. D.
Richmond	University of Richmond	Coed	F. W. Boatwright, LL. D.
Do	Virginia Union University (colored).	Men	William J. Clark, B. D.
Salem	Roanoke College	Men	Charles J. Smith, D. D.
Do	Elizabeth College	Women	Paul Sieg, A. M.
Sweet Briar	Sweet Briar College	Women	Emilie W. McVea, Litt. D.
Williamsburg	College of William and Mary	Coed	J. A. C. Chandler, LL. D.
WASHINGTON.			
Pullman	State College of Washington	Coed	Ernest O. Holland, Ph. D.
Seattle	University of Washington	Coed	Henry Suzzallo, LL. D.
Spokane	Gonzaga University	Men	John A. McHugh, S. J.
Tacoma	College of Puget Sound	Coed	Edward H. Todd, D. D.
Walla Walla	Whitman College	Coed	Stephen B. L. Penrose, D. D.
WEST VIRGINIA.			
Barboursville	Morris Harvey College	Coed	R. T. Webb, D. D.
Bethany	Bethany College	Coed	Cloyd Goodnight, A. M.
Buckhannon	West Virginia Wesleyan College	Coed	Wallace B. Fleming, D. D.
Elkins	Davis and Elkins College	Coed	James E. Allen, A. B.
Morgantown	West Virginia University	Coed	Frank B. Trotter, LL. D.
Salem	Salem College	Coed	S. Orestes Bond, A. M.
WISCONSIN.			
Appleton	Lawrence College	Coed	Samuel Plantz, LL. D.
Beloit	Beloit College	Coed	Melvin A. Brannon, LL. D.
Madison	University of Wisconsin	Coed	Edward A. Birge, LL. D.
Milton	Milton College	Coed	Wm. C. Daland, D. D.
Milwaukee	Marquette University	Men	Herbert C. Noonan, S. J.
Do	Milwaukee-Downer College	Women	Ellen C. Sabin, LL. D.
Plymouth	Mission House	Coed	
Prairie du Chien	Campion College	Men	Albert C. Fox, S. J.
Do	St. Mary's College	Women	Mother Mary Seraphia.
Ripon	Ripon College	Coed	Henry C. Culbertson, LL. D.
Sinsinawa	St. Clara College and Academy	Women	Sister M. Clementine, A. M., dean.
Watertown	Northwestern College	Men	E. E. Kowalke, A. B.
Waukesha	Carroll College	Coed	L. S. Daucey, acting.
WYOMING.			
Laramie	University of Wyoming	Coed	Aven Nelson, Ph. D.

XVI.—PRESIDENTS OF JUNIOR COLLEGES.

Location.	Name of institution.	President.
Eureka Springs, Ark	Crescent College	Richard R. Thompson, A. M.
Bakersfield, Calif	Junior College [1]	Paul Vandereike, dean.
Chico, Calif	do.[1]	
Eureka, Calif	do.[1]	
Fresno, Calif	do.[1]	Walter O. Smith, A. M.
Fullerton, Calif	do.[1]	Lewis E. Plummer.
Hollister, Calif	do.[1]	
Long Beach, Calif	do.[1]	
Ontario, Calif	do.[1]	
Pomono, Calif	Junior College [1]	H. P. Reynolds, B. S.
Riverside, Calif	Riverside Junior College	Donald P. McAlpine, A. B.
Sacramento, Calif	Junior College [1]	Herbert O. Williams, A. M.
San Diego, Calif	do.[1]	Mott H. Arnold, A. M.
Santa Ana, Calif	do.[1]	D. K. Hammond, A. B.
Santa Babara, Calif	do.[1]	Wm. H. Ellison, Ph. D.
Santa Maria, Calif	do.[1]	
Turlock, Calif	do.[1]	
Cuthbert, Ga	Andrew College	F. G. Branch, B. S.

[1] Part of public-school system.

XVI.—PRESIDENTS OF JUNIOR COLLEGES—Continued.

Location.	Name of institution.	President.
Young Harris, Ga.	Young L. G. Harris College	John L. Hall, A. B.
Pocatello, Idaho.	Idaho Technical Institute	Miles F. Reed, A. M.
Carlinville, Ill.	Blackburn College	Wm. M. Hudson, D. D.
Chicago, Ill.	Crane Junior College	Wm. J. Bartholf.
Godfrey, Ill.	Monticello Seminary	Harriet R. Congdon, A. B.
Joliet, Ill.	Junior College[1]	L. W. Smith, Ph. D.
Mount Carroll, Ill.	Frances Shimer School	Wm. P. McKee, A. M.
Lamoni, Iowa.	Graceland College	George N. Briggs, A. B.
Osage, Iowa.	Cedar Valley Junior College	Amos M. Vance.
Holton, Kans.	Junior College[1]	Emery W. Leamer, A. B.
Oswego, Kans.	Oswego College	Irwin F. Mather, Litt. D.
Danville, Ky.	Kentucky College for women	M. M. Allen, D. D.
Hopkinsville, Ky.	Bethel Woman's College	John W. Gaines, A. M.
Lexington, Ky.	Hamilton College for Women	Elizabeth Williamson, A. M., dean.
Do.	Sayre College	Mrs. Mande S. Barnett.
Russellville, Ky.	Logan Female College	George H. Crowell, Ph. D.
Mansfield, La.	Mansfield Female College	R. E. Bobbitt, B. S.
Baltimore, Md.	Mount Vernon College	Wyllis Rede.
Detroit, Mich.	Junior College[1]	David MacKenzie, A. M.
Grand Rapids, Mich.	do[1]	Jesse B. Davis, A. M.
Highland Park, Mich.	Highland Park Junior College	William Prakken, A. B.
Hibbing, Minn.	do[1]	G. W. Willett, A. M.
Rochester, Minn.	do[1]	
Holly Springs, Miss.	Mississippi Synodical College	T. W. Raymond, D. D.
Columbia, Mo.	Christian College	Mrs. L. W. St. Claire-Moss, A. B.
Do.	Stephens College	James M. Wood, A. M.
Fayette, Mo.	Howard Payne College	W. L. Halberstadt, A. B.
Frederick, Mo.	Marvin College	Burt W. Loomis, A. M.
Fulton, Mo.	Synodical College for Girls	John James, A. B.
Do.	William Woods College	Joseph A. Serena, A. B.
Kansas City, Mo.	Junior College of Kansas City	Edward M. Bainter, LL. D.
La Grange, Mo.	La Grange College	James W. Crouch, D. D.
Lexington, Mo.	Central College for Women	Z. M. Williams, D. D.
Mexico, Mo.	Hardin College	John W. Million, LL. D.
Nevada, Mo.	Cottey College	Mrs. V. A. C. Stockard, A. M.
St. Charles, Mo.	Lindenwood College	John L. Roemer, D. D.
St. Louis, Mo.	The Principia	Mary K. Morgan.
Lenoir, N. C.	Davenport College	James B. Craven.
Louisburg, N. C.	Louisburg College	Franklin S. Love, A. M.
Weaverville, N. C.	Weaver College	A. M. Martin, A. M.
Milton, Oreg.	Columbia College	H. S. Shangle.
Wessington Springs, S. Dak.	Wessington Springs Junior College	Burton J. Vincent, A. B.
Madisonville, Tenn.	Hiwassee College	J. E. Lowry, A. M.
Pulaski, Tenn.	Martin College	Geo. A. Morgan, D. D.
Arlington, Tex.	Grubbs Vocational College	
Claredon, Tex.	Claredon College	G. S. Slover, A. M.
Dallas, Tex.	St. Mary's College	
Decatur, Tex.	Decatur Baptist College	J. L. Ward, A. M.
Greenville, Tex.	Burleson, College	W. I. Thames.
Do.	Wesley College	G. F. Winfield, A. M.
Jacksonville, Tex.	Alexander College	R. G. Boyer, A. M.
Marshall, Tex.	College of Marshall	John S. Humphrey.
Meridian, Tex.	Meridian College	J. Hall Bowman.
Midland, Tex.	Midland College	
Rust, Tex.	Rust Junior College	
San Antonio, Tex.	Westmoorland College	J. W. Repass, A. M.
Sherman, Tex.	Kidd-Key College	Edwin Kidd.
Stephenville, Tex.	John Tarleton Agricultural College	
Tehuacana, Tex.	Westminster College	John C. Williams, D. D.
Terrell, Tex.	Texas Military College	Louis C. Perry, Ph. D.
Thorp Springs, Tex.	Thorp Springs Christian College	A. R. Holton, A. M.
Abingdon, Va.	Stonewall Jackson College	Fred W. Alexander, A. M.
Blackstone, Va.	Blackstone College for Girls	W. Asbury Christian, D. D.
Bristol, Va.	Sullins College	W. E. Martin, Ph. D.
Do.	Virginia Intermont College	H. G. Noffsinger, A. M.
Daleville, Va.	Daleville College	T. S. Moherman, D. D.
Danville, Va.	Averette College	C. E. Crosland, A. B.
Marion, Va.	Marion College	C. Brown Cox, A. M.
Petersburg, Va.	Southern College	Arthur K. Davis, A. M.
Roanoke, Va.	Virginia College	Mattie P. Harris.
Staunton, Va.	Mary Baldwin College	Marianna P. Higgins.
Everett, Wash.	Junior College[1]	W. J. Marquis.

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[1] Part of public-school system.

XVII.—DEANS OR DIRECTORS OF COLLEGES OR SCHOOLS OF ENGINEERING.

Location.	Name of institution.	Dean or director.
Auburn, Ala	Alabama Polytechnic Institute	John J. Wilmore, M. E.
University, Ala	University of Alabama	George J. Davis, jr., C. E.
Tucson, Ariz	University of Arizona	Gurdon M. Butler, E. M.
Fayetteville, Ark	University of Arkansas	Wm. N. Gladson, Ph. D.
Berkeley, Calif	University of California	Charles Derleth, jr., C. E.[1] Frank H. Probert, A. R. S. M.[2] Clarence L. Cory, D. Eng.[3]
Los Angeles, Calif	University of Southern California	Charles W. Lawrence, C. E.
Pasadena, Calif	California Institution of Technology	
Santa Clara, Calif	University of Santa Clara	Geo. L. Sullivan, Ph. D.
Stanford University, Calif	Leland Stanford Junior University	Charles D. Marx, C. E.
Boulder, Colo	University of Colorado	Herbert S. Evans, E. E.
Colorado Springs, Colo	Colorado College	Frank M. Okey, C. E.
Fort Collins, Colo	Colorado Agricultural College	L. D. Crane, B. M. E.
Golden, Colo	State School of Mines	Victor C. Alderson, Sc. D.
New Haven, Conn	Sheffield Scientific School (Yale University).	Russell H. Chittenden, Sc. D.
Newark, Del	Delaware College	
Washington, D. C	Catholic University of America	Aubrey E. Landry, Ph. D.
Do	George Washington University	Howard L. Hodgkins, Ph. D.
Do	Howard University (colored)	Harold D. Hatfield, M. E.
Gainesville, Fla	University of Florida	John R. Benton, Ph. D.
Athens, Ga	University of Georgia	Charles M. Strahan, Sc. D.
Atlanta, Ga	Georgia School of Technology	William H. Emerson, Ph. D.
Moscow, Idaho	University of Idaho	Charles N. Little, Ph. D.
Chicago, Ill	Armour Institute of Technology	Howard M. Raymond, B. S.
Do	Lewis Institute	Philip B. Woodworth, M. E.
Evanston, Ill	Northwestern University	John F. Hayford, Sc. D.
Urbana, Ill	University of Illinois	C. Russ Richards, M. M. E.
La Fayette, Ind	Purdue University	Audrey A. Potter, B. S.
Notre Dame, Ind	University of Notre Dame	Martin McCue, C. E.
Terre Haute, Ind	Rose Polytechnic Institute	John White, Ph. D., acting president.
Valparaiso, Ind	Valparaiso University	Frank R. Theroux, C. E.
Ames, Iowa	Iowa State College of Agriculture and Mechanic Arts.	Anson Marston, C. E.
Des Moines, Iowa	Des Moines College	Adolph Shane, E. E.
Iowa City, Iowa	State University of Iowa	William G. Raymond, LL. D.
Lawrence, Kans	University of Kansas	Perley F. Walker, M. M. E.
Manhattan, Kans	Kansas State Agricultural College	R. A. Seaton, M. S., acting.
Lexington, Ky	University of Kentucky	Frederick P. Anderson, M. E.
Baton Rouge, La	Louisiana State University and Agricultural and Mechanical College.	Thomas W. Atkinson, C. E.
New Orleans, La	Tulane University of Louisiana	Douglas Anderson, A. M.
Orono, Me	University of Maine	Harold S. Boardman, C. E.
Baltimore, Md	Johns Hopkins University	John B. Whitehead, Ph. D.
College Park, Md	University of Maryland	A. N. Johnson.
Boston, Mass	Northeastern College	Carl S. Ell, M. S.
Cambridge, Mass	Harvard University	Hector J. Hughes, B. S.
Do	Massachusetts Institute of Technology	Alfred E. Burton, Sc. D.
Lowell, Mass	Lowell Textile School	Herbert J. Ball, B. S.
Tufts College, Mass	Tufts College	Gardner C. Anthony, Sc. D.
Worcester, Mass	Worcester Polytechnic Institute	Ira N. Hollis, Sc. D., president.
Ann Arbor, Mich	University of Michigan	Mortimer E. Cooley, D. Eng.
Detroit, Mich	University of Detroit	Jay R. McColl, B. S.
East Lansing, Mich	Michigan Agricultural College	George W. Bissell, M. E.
Houghton, Mich	Michigan College of Mines	Fred W. McNair, Sc. D., president.
Minneapolis, Minn	University of Minnesota	Ora M. Leland, B. S. William R. Appleby, A. M.[2]
Agricultural College, Miss	Mississippi Agricultural and Mechanical College.	Buz M. Walker, Ph. D.
University, Miss	University of Mississippi	John H. Dorroh, C. E.
Columbia, Mo	University of Missouri	Elmer J. McCaustland, M. C. E. Austin L. McRae, Sc. D.[4]
St. Louis, Mo	Washington University	Walter E. McCourt, A. M.
Bozeman, Mont	Montana College of Agriculture and Mechanic Arts.	E. B. Norris, B. S.
Butte, Mont	Montana State School of Mines	Charles H. Clapp, Ph. D., president.
Lincoln, Nebr	University of Nebraska	Olin J. Ferguson, M. E. E.
Reno, Nev	University of Nevada	H. P. Boardman, C. E., acting. Francis C. Lincoln, Ph. D.[5]
Durham, N. H	New Hampshire College of Agriculture and Mechanic Arts.	Charles E. Hewett, M. M. E.
Hanover, N. H	Dartmouth College	Charles A. Holden, C. E.
Hoboken, N. J	Stevens Institute of Technology	Alexander C. Humphreys, LL. D., president.

[1] Dean of the college of civil engineering.

[2] Dean of the college of mines.

[3] Dean of the college of mechanics.

[4] Dean of the school of mines.

[5] Director of Mackay School of Mines.

XVII.—Deans or Directors of Colleges or Schools of Engineering—Contd.

Location.	Name of institution.	Dean or director.
New Brunswick, N. J.	Rutgers College	Alfred A. Titsworth, Sc. D.
Princeton, N. J.	Princeton University	Frank H. Constant, Sc. D.
Albuquerque, N. Mex.	University of Mexico	Thomas T. Eyre, B. S.
Socorro, N. Mex.	New Mexico School of Mines	Alexis X. Illinski, Met. E., president.
State College, N. Mex.	New Mexico College of Agriculture and Mechanic Arts.	Ralph W. Goddard, E. E.
Brooklyn, N. Y.	Polytechnic Institute of Brooklyn	Fred W. Atkinson, Ph. D., president.
Ithaca, N. Y.	Cornell University	D. S. Kimball.
New York, N. Y.	College of the City of New York	Sidney E. Mezes, LL. D., president.
Do.	Columbia University	George B. Pegram, Ph. D.
Do.	Manhattan College	Brother Thomas, C. E.
Do.	New York University	Charles H. Snow, Sc. D.
Potsdam, N. Y.	Clarkson College of Technology	John P. Brooks, Sc. D.
Rochester, N. Y.	University of Rochester	Millard C. Ernsberger, M. E.
Schenectady, N. Y.	Union University	Frank P. McKibben, B. S.
Syracuse, N. Y.	Syracuse University	William P. Graham, Ph. D.
Troy, N. Y.	Rensselaer Polytechnic Institute	Palmer C. Ricketts, LL. D., president.
Chapel Hill, N. C.	University of North Carolina	Andrew H. Patterson, A. M.
West Raleigh, N. C.	North Carolina State College of Agriculture and Engineering.	
Agricultural College, N. Dak.	North Dakota Agricultural College	Edward S. Keene, M. E.
University, N. Dak.	University of North Dakota	Earle J. Babcock, Sc. D.
Ada, Ohio.	Ohio Northern University	Charles A. Miller, C. E.
Akron, Ohio.	Municipal University of Akron	Fred E. Ayer, C. E.
Cincinnati, Ohio.	University of Cincinnati	Herman Schneider, Sc. D.
Cleveland, Ohio.	Case School of Applied Science	Theodore M. Focke, Ph. D.
Columbus, Ohio.	Ohio State University	E. A. Hitchcock, M. E.
Dayton, Ohio.	St. Mary College	Brother Adam Hofmann, S. M.
Norman, Okla.	University of Oklahoma	James H. Felgar, M. E.
Stillwater, Okla.	Oklahoma Agricultural and Mechanical College.	J. H. Bringhurst, B. C. E.
Corvallis, Oreg.	Oregon State Agricultural College	Grant A. Covell, M. E.
Bethlehem, Pa.	Lehigh University	
Chester, Pa.	Pennsylvania Military College	Harold C. Bird, C. E.
Easton, Pa.	Lafayette College	Donald B. Prentice, M. E.
Gettysburg, Pa.	Pennsylvania College	F. H. Clutz, Ph. D.
Lewisburg, Pa.	Bucknell University	Charles A. Lindemann, A. M.
Philadelphia.	Drexel Institute	Frank H. Linthicum, B. S.
Do.	University of Pennsylvania	John Frazer, Ph. D.
Pittsburgh, Pa.	Carnegie Institute of Technology	Wm. E. Mott, C. E.
Do.	University of Pittsburgh	Frederic L. Bishop, Sc. D.
State College, Pa.	Pennsylvania State College	Robert L. Sackett, C. E. Elwood S. Moore, Ph. D.[6]
Swarthmore, Pa.	Swarthmore College	George F. Blessing, Ph. D.
Villanova, Pa.	Villanova College	Francis A. Driscoll, A. M.
Kingston, R. I.	Rhode Island State College	Royal L. Wales, B. S.
Providence, R. I.	Brown University	William H. Kenerson, Sc. D.
Charleston, S. C.	The Citadel, the Military College of South Carolina.	L. S. Le Tellier, M. S.
Clemson College, S. C.	Clemson Agricultural College	Samuel B. Earle, M. E.
Columbia, S. C.	University of South Carolina	Marshall G. Homes, C. E.
Brookings, S. Dak.	South Dakota State College of Agriculture and Mechanic Arts.	Halvor C. Solberg, M. E.
Rapid City, S. Dak.	South Dakota State School of Mines	Cleophas C. O'Harra, Ph. D., president.
Vermilion, S. Dak.	University of South Dakota	Lewis E. Akeley, LL. D.
Knoxville, Tenn.	University of Tennessee	Charles E. Ferris, M. E.
Nashville, Tenn.	Vanderbilt University	W. H. Schuerman, C. E.
Austin, Tex.	University of Texas	Thomas U. Taylor, M. C. E.
College Station, Tex.	Agricultural and Mechanical College of Texas.	James C. Nagle, M. C. E.
Houston, Tex.	Rice Institute	Herbert K. Humphrey, E. E.
Salt Lake City, Utah.	University of Utah	Joseph F. Merrill, Ph. D.
Burlington, Vt.	University of Vermont and State Agricultural College.	Josiah W. Votey, Sc. D.
Northfield, Vt.	Norwich University	Arthur W. Winslow, C. E.
Blacksburg, Va.	Virginia Agricultural and Mechanical College and Polytechnic Institute.	Samuel R. Pritchard, A. M.
Charlottesville, Va.	University of Virginia	William M. Thornton, LL. D.
Lexington, Va.	Virginia Military Institute	Francis Mallory, C. E.
Do.	Washington and Lee University	David C. Humphreys, C. E.
Pullman, Wash.	State College of Washington	Hubert V. Carpenter, M. S.
Seattle, Wash.	University of Washington	Carl E. Magnusson, Ph. D.
Morgantown, W. Va.	West Virginia University	Clement R. Jones, M. M. E.
Madison, Wis.	University of Wisconsin	Frederick E. Turneaure, D. Eng.
Milwaukee, Wis.	Marquette University	J. C. Pinney, C. E.
Laramie, Wyo.	University of Wyoming	Elmer G. Hoefer, M. E.

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[6] Dean of the school of mines.

XVIII.—DEANS OR DIRECTORS OF COLLEGES OF AGRICULTURE.

Location.	Name of institution.	Dean.
Auburn, Ala	Alabama Polytechnic Institute	Spright Dowell, LL. D.[1]
Tucson, Ariz	University of Arizona	Daniel W. Working, A. M.
Fayetteville, Ark	University of Arkansas	Bradford Knapp, B. S.
Berkeley, Calif	University of California	Thomas F. Hunt, Sc. D.
Fort Collins, Colo	Colorado Agricultural College	Charles A. Lory, LL. D.[1]
Storrs, Conn	Connecticut Agricultural College	Charles L. Beach, B. S.[1]
Newark, Del	Delaware College	C. A. McCue, B. S.
Gainesville, Fla	University of Florida	Peter H. Rolfs, M. S.
Athens, Ga	Georgia State College of Agriculture and the Mechanic Arts.	Andrew M. Soule, Sc. D.[1]
Honolulu, Hawaii	College of Hawaii	Arthur L. Dean, Ph. D.[1]
Moscow, Idaho	University of Idaho	Edward J. Iddings, B. S.
Urbana, Ill	University of Illinois	Eugene Davenport, LL. D.
Lafayette, Ind	Purdue University	John H. Skinner, B. S.
Ames, Iowa	Iowa State College of Agriculture and Mechanic Arts.	Charles F. Curtiss, D. S. Agr.
Manhattan, Kans	Kansas State Agricultural College	F. D. Farrell, B. S.
Lexington, Ky	University of Kentucky	Thomas P. Cooper, B. S.
Baton Rouge, La	Louisiana State University and Agricultural and Mechanical College.	W. H. Dalrymple, M. R. C. V. S.
Orono, Me	University of Maine	Lucius S. Merrill, Sc. D.
College Park, Md	University of Maryland	P. W. Zimmerman, M. S.
Amherst, Mass	Massachusetts Agricultural College	Kenyon L. Butterfield, LL. D.[1]
East Lansing, Mich	Michigan Agricultural College	R. S. Shaw, B. S. A.
Minneapolis, Minn	University of Minnesota	Roscoe W. Thatcher, A. M.
Agricultural College, Miss.	Mississippi Agricultural and Mechanical College	J. C. Roberts, M. S. A.
Columbia, Mo	University of Missouri	Frederick B. Mumford, M. S.
Bozeman, Mont	Montana State College of Agriculture and Mechanic Arts.	F. B. Linfield, B. S. A.
Lincoln, Nebr	University of Nebraska	Edgar A. Burnett, Sc. D.
Reno, Nev	University of Nevada	Charles S. Knight, B. S.
Durham, N. H	New Hampshire College of Agriculture and Mechanic Arts.	Frederick W. Taylor, B. S
New Brunswick, N. J.	Rutgers College	J. G. Lipman, Ph. D.
State College, N. Mex.	New Mexico College of Agriculture and Mechanic Arts.	R. W. Clothier, Ph. D.[1]
Ithaca, N. Y	New York State College of Agriculture (Cornell University).	Albert R. Mann, A. M.
Syracuse, N. Y	Syracuse University	R. L. Nye, B. S.
West Raleigh, N. C	North Carolina State College of Agriculture and Engineering.	Charles B. Williams, M. S.
Agricultural College, N. Dak.	North Dakota Agricultural College	C. B. Waldron, B. S.
Columbus, Ohio	Ohio State University	Alfred Vivian, G. Ph.
Stillwater, Okla	Oklahoma Agricultural and Mechanical College	Henry G. Knight, Ph. D.
Corvallis, Oreg	Oregon Agricultural College	Arthur B. Cordley, Sc. D.
State College, Pa	Pennsylvania State College	Ralph L. Watts, D. Agr.
San Juan, P. R	University of Porto Rico	R. S. Garwood, A. M.
Kingston, R. I	Rhode Island State College	George E. Adams, M. Agr.
Clemson College, S. C.	Clemson Agricultural College	Fred H. H. Calhoun, Ph. D.[2]
Brookings, S. Dak	South Dakota State College of Agriculture and Mechanic Arts.	W. E. Johnson, Ph. D.[1]
Knoxville, Tenn	University of Tennessee	C. A. Wilson, M. S. A.[3]
College Station, Tex	Agricultural and Mechanical College of Texas	E. J. Kyle, M. S. A.
Logan, Utah	Agricultural College of Utah	George R. Hill, Ph. D.
Burlington, Vt	University of Vermont and State Agricultural College.	Joseph L. Hills, Sc. D.
Blacksburg, Va	Virginia Agricultural and Mechanical College and Polytechnic Institute.	Harvey L. Price, A. M.
Pullman, Wash	State College of Washington	E. G. Johnson, A. M.
Morgantown, W. Va	West Virginia University	John L. Coulter, Ph. D.
Madison, Wis	University of Wisconsin	Harry L. Russell, Ph. D.
Laramie, Wyo	University of Wyoming	Alpheus D. Faville, M. S.

[1] President. [2] Director. [3] Vice Dean.

XIX.—PRESIDENTS OF STATE COLLEGES FOR NEGROES.

Location.	Name of institution.	President.
Normal, Ala.	State Agricultural and Mechanical College for Negroes.	Walter S. Buchanan, A. M.
Pine Bluff, Ark.	Branch Normal College.	J. G. Ish, jr.[1]
Dover, Del.	State College for Colored Students.	W. C. Jason, D. D.
Tallahassee, Fla.	Florida Agricultural and Mechanical College for Negroes.	Nathan B. Young, A. M.
Savannah, Ga.	Georgia State Industrial College.	R. R. Wright, LL. D.
Frankfort, Ky.	Kentucky Normal and Industrial Institute for Colored Persons.	G. P. Russell, LL. D.
Baton Rouge, La.	Southern University and Agricultural and Mechanical College.	J. S. Clark, Ph. D.
Princess Anne, Md.	Princess Anne Academy.	T. H. Kiah.[2]
Alcorn, Miss.	Alcorn Agricultural and Mechanical College.	L. J. Rowan, Ph. D.
Jefferson City, Mo.	Lincoln Institute.	Clement Richardson.
Greensboro, N. C.	Negro Agricultural and Technical College.	James B. Dudley, LL. D.
Langston, Okla.	Colored Agricultural and Normal University.	John M. Marquess, A. B.
Orangeburg, S. C.	Colored Normal, Industrial, Agricultural, and Mechanical College.	Robert S. Wilkinson, Ph. D.
Nashville, Tenn.	Agricultural and Industrial State Normal School for Negroes.	William J. Hale.
Prairie View, Tex.	Prairie View State Normal and Industrial College.	J. G. Osborne.[2]
Petersburg, Va.	Virginia Normal and Industrial Institute.	John M. Gandy.
Institute, W. Va.	West Virginia Collegiate Institute.	J. W. Davis.

[1] Superintendent.

[2] Principal.

XX.—HEADS OF DEPARTMENTS OF EDUCATION.

Location.	University or college.	For men, for women, or coeducational.	Name of head of department or school of education.
ALABAMA.			
Athens	Athens Female College	Women	Jane E. B. Brown, A. M.
Auburn	Alabama Polytechnic Institute	Coed	Zebulon V. Judd, A. M.
Birmingham	Birmingham-Southern College	Coed	Robert F. Cooper, Ph. D.
Do	Howard College	Coed	W. E. Bohannon, A. M.
Marion	Judson College	Women	Paul F. Keeton, Ph. D.
Montevallo	Alabama Technical Institute and College for Women.	Women	Myrtle Brooke, A. M.
Montgomery	Woman's College of Alabama	Women	Sara Ritter, Ph. D.
Talladega	Talladega College (colored)	Coed	James T. Cater, A. M.
University	University of Alabama	Coed	James J. Doster, LL. D.
ARIZONA.			
Tucson	University of Arizona	Coed	John O. Creager, A. M.
ARKANSAS.			
Arkadelphia	Henderson-Brown College	Coed	B. S. Foster, LL. D.
Do	Ouachita College	Coed	Mrs. E. M. Blake.
Batesville	Arkansas College	Coed	Sidney Pickens, A. B.
Clarksville	Arkansas Cumberland College	Coed	Frank P. Hiner, A. B.
Conway	Central College	Women	S. R. Doyle.
Do	Hendrix College	Coed	
Fayetteville	University of Arkansas	Coed	James R. Jewell, Ph. D.
CALIFORNIA.			
Berkeley	University of California[1]	Coed	Alexis F. Lange, Ph. D.
Claremont	Pomona College	Coed	George S. Sumner, Ph. D.
Los Angeles	Occidental College	Coed	George F. Cook, Ph. D.
Do	University of Southern California	Coed	W. F. Jones, Ph. D.
Mills College	Mills College	Women	
Oakland	St. Mary's College	Men	Brother Z. Leo, L. H. D.
Redlands	University of Redlands	Coed	Herbert E. Wise, A. M.
St. Helena	Pacific Union College	Coed	Charles W. Irwin, A. M.
San Jose	College of the Pacific	Coed	J. William Harris, Ph. D.
Santa Clara	University of Santa Clara	Men	Cornelius A. Buckley, S. J.
Stanford University	Leland Stanford Junior University	Coed	Ellwood P. Cubberley, Ph. D.
Whittier	Whittier College	Coed	Florabel P. Rosenberger, A. M.

[1] Southern branch of University of California, Los Angeles, Ernest C. Moore, LL. D., director.

XX.—HEADS OF DEPARTMENTS OF EDUCATION—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of head of department or school of education.
COLORADO.			
Boulder	University of Colorado	Coed	Frank E. Thompson, A. B.
Colorado Springs	Colorado College	Coed	A. E. Davies, Ph. D.
Denver	Colorado Woman's College	Women	Jay P. Treat, A. M.
Do	University of Denver	Coed	Daniel E. Phillips, Litt. D.
Fort Collins	Colorado Agricultural College	Coed	C. G. Sargent, B. S. A.
Greeley	State Teachers College of Colorado	Coed	Thomas C. McCracken, Ph. D.
CONNECTICUT.			
New Haven	Yale University	Men	Frank E. Spaulding, Ph. D.
Storrs	Connecticut Agricultural College	Coed	Theodore H. Eaton, Ph. D.
DELAWARE.			
Newark	Delaware College	Coed	Wm. A. Wilkinson, A. M.
DISTRICT OF COLUMBIA.			
Washington	Catholic Sisters College	Women	
Do	Catholic University of America	Men	Thomas E. Shields, Ph. D.
Do	George Washington University	Coed	William C. Ruediger, Ph. D.
Do	Howard University (colored)	Coed	T. W. Turner, A. M., acting.
Do	Trinity College	Women	Patrick J. McCormick, Ph. D.
Washington (Takoma Park).	Washington Missionary College	Coed	Mrs. B. S. Chaney, A. M.
FLORIDA.			
Deland	John B. Stetson University	Coed	Daniel J. Blocker, D. D.
Gainesville	University of Florida	Men	H. W. Cox, Ph. D.
Tallahassee	Florida State College for Women	Women	Nathaniel M. Salley, A. B.
Winter Park	Rollins College	Coed	C. K. Hoyt.
GEORGIA.			
Athens	University of Georgia	Men	Thomas J. Woofter, LL. D.
Atlanta	Atlanta University (colored)	Coed	George A. Towns, A. M.
Do	Georgia School of Technology	Men	Emmett P. Tracy, C. E.
Do	Morris Brown University (colored)	Coed	Mrs. Alice Carey.
Augusta	Paine College (colored)	Coed	Howard H. Long, A. M.
College Park	Cox College	Women	E. C. James, Litt. D.
Cuthbert	Andrew College	Women	J. L. Strozier.
Dahlonega	North College Agricultural College	Coed	George W. Camp, A. M.
Decatur	Agnes Scott College	Women	S. G. Stukes, A. M.
Demorest	Piedmont College	Coed	Frank Diehl, Ph. D.
Emory University	Emory University	Men	G. C. White, A. M.
Forsyth	Bessie Tift College	Women	John T. Miller, A. B.
Gainesville	Brenau College	Women	T. J. Simmons, LL. D.
Legrange	Lagrange College	Women	Clifton C. Gray, A. M.
Macon	Mercer University	Men	Peyton Jacob, A. M.
Do	Wesleyan College	Women	Lois Rogers, A. M.
Rome	Shorter College	Women	Wm. D. Furry, Ph. D.
South Atlanta	Clark University (colored)	Coed	John Zedler, Ph. D.
HAWAII.			
Honolulu	University of Hawaii	Coed	J. K. Flanders, A. M.
IDAHO.			
Caldwell	College of Idaho	Coed	Payne A. Boulton, A. M.
Moscow	University of Idaho	Coed	J. F. Messenger, Ph. D.
Pocatello	Idaho Technical Institute	Coed	
ILLINOIS.			
Abingdon	Hedding College	Coed	Sara J. Morrissey, A. M.
Alton	Shurtleff College	Coed	George M. Potter, A. M.; president.
Aurora	Aurora College	Coed	David H. Woodward, D. D.
Bloomington	Illinois Wesleyan University	Coed	W. O. Allen, Ph. D.
Bourbonnais	St. Vistor College	Men	W. J. Maguire.
Carthage	Carthage College	Coed	Letta Simmons, B. S.
Chicago	Lewis Institute	Coed	Clarence E. De Puy, B. S.
Do	Loyola University	Men	George P. Shanley, S. J.
Do	University of Chicago	Coed	Charles H. Judd, LL. D.

XX.—HEADS OF DEPARTMENTS OF EDUCATION—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of head of department or school of education.
ILLINOIS—continued.			
Decatur	James Millikin University	Coed	Luther B. Henderson, B. D.
Eureka	Eureka College	Coed	Silas Jones, A. M.
Evanston	Northwestern University	Coed	Elmer E. Jones, Ph. D.
Ewing	Ewing College	Coed	Edward L. Carr, D. D.
Galesburg	Knox College	Coed	James L. McConaughy, Ph. D., president.
Do.	Lombard College	Coed	Luther J. Pollard, A. M.
Greenville	Greenville College	Coed	Leslie R. Marston, A. M.
Jacksonville	Illinois College	Coed	Roy F. Swift, Ph. D.
Do	Illinois Women's College	Women	Pearl L. Weber, A. B.
Lake Forest	Lake Forest College	Coed	Mary Hamilton, A. M.
Lebanon	McKendree College	Coed	W. C. Walton, Ph. D.
Lincoln	Lincoln College	Coed	E. O. Kock, A. M.
Monmouth	Monmouth College	Coed	Milton M. Maynard, A. M.
Naperville	Northwestern College	Coed	Edward E. Rall, Ph. D., president.
Peoria	Bradley Polytechnic Institute	Coed	Albert F. Siepert, B. S.
Rockford	Rockford College	Women	Wm. A. Maddox.
Rock Island	Augustana College	Coed	Axel R. Wallin, Ph. D.
Urbana	University of Illinois	Coed	Charles E. Chadsey, Litt. D.
Wheaton	Wheaton College	Coed	Wm. F. Rice, A. M.
INDIANA.			
Bloomington	Indiana University	Coed	Henry L. Smith, Ph. D.
Crawfordsville	Wabash College	Men	George H. Tapy, A. M.
Earlham	Earlham College	Coed	George H. Hilliard, A. M.
Evansville	Evansville College	Coed	Arvil S. Barr, A. M.
Franklin	Franklin College	Coed	John L. Beyl, Ph. D.
Goshen	Goshen College	Coed	John J. Fisher, A. M.
Greencastle	De Pauw University	Coed	John A. Clement, Ph. D.
Hanover	Hanover College	Coed	Clem D. Thompson, A. M.
Indianapolis	Butler College	Coed	Wm. L. Richardson, Ph. D.
Do	Indiana Central University	Coed	H. W. Marshall, A. M.
La Fayette	Purdue University	Coed	George L. Roberts, A. M.
Notre Dame	St. Mary's College and Academy	Women	
Do	University of Notre Dame	Men	Thomas P. Irving, Ph. D.
Oakland City	Oakland City College	Coed	J. E. McMullan, Ph. D.
Upland	Taylor University	Coed	B. W. Ayres, Ph. D.
Valparaiso	Valparaiso University	Coed	George W. Neet, Ped. D.
Vincennes	Vincennes University	Coed	Rose Bland, A. M.
IOWA.			
Ames	Iowa State College of Agriculture and Mechanic Arts.	Coed	Guy M. Wilson, A. M.
Cedar Falls	Iowa State Teachers College	Coed	G. W. Walters, M. S.
Cedar Rapids	Coe College	Coed	Alexander C. Robbie, A. M.
Davenport	St. Ambrose College	Men	
Decorah	Luther College	Men	Oscar A. Tingelstad, Ph. D.
Des Moines	Des Moines College	Coed	Charles E. Germane, Ph. D.
Do	Drake University	Coed	Wm. F. Barr, A. M.
Dubuque	Columbia College	Men	J. B. Herbers, A. M.
Do	University of Dubuque	Coed	George C. Fracker, Ph. D.
Fairfield	Parsons College	Coed	John E. Winter, Ph. D.
Fayette	Upper Iowa University	Coed	Wm. C. Mongold, A. M.
Grinnell	Grinnell College	Coed	L. D. Hartson, Ph. D.
Hopkinton	Lenox College	Coed	Ely V. Laughlin, LL. D.
Indianola	Simpson College	Coed	J. P. McCoy, A. M.
Iowa City	State University of Iowa	Coed	Wm. F. Russell, Ph. D.
Iowa Falls	Ellsworth College	Coed	Harold C. Bingham, A. M.
Lamoni	Graceland College	Coed	F. M. McDowell, Ph. D.
Mount Pleasant	Iowa Wesleyan College	Coed	Samuel Weir, Ph. D.
Mount Vernon	Cornell College	Coed	E. O. Finkenbinder, Ph. D.
Oskaloosa	Penn College	Coed	Ella H. Stokes, Ph. D.
Pella	Central University of Iowa	Coed	J. Heemstra, A. M.
Sioux City	Morningside College	Coed	E. A. Brown, A. M.
Storm Lake	Buena Vista College	Coed	E. V. Burdick, A. M.
Tabor	Tabor College	Coed	C. W. Schroeder, A. M.
University Park	Central Holiness University	Coed	J. W. Hoffman, A. B.
KANSAS.			
Baldwin City	Baker University	Coed	Lillian Shott, A. M.
Emporia	College of Emporia	Coed	C. B. Newcom, Ph. D.
Kansas City	Kansas City University	Coed	Wm. S. Reese, D. D.
Lawrence	University of Kansas	Coed	F. J. Kelley, Ph. D.
Lindsborg	Bethany College	Coed	Anna A. Carlson.

XX.—HEADS OF DEPARTMENTS OF EDUCATION—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of head of department or school of education.
KANSAS—continued.			
McPherson	McPherson College	Coed	J. A. Blair, A. M.
Manhattan	Kansas State Agricultural College	Coed	Edwin L. Holton, A. B.
Ottawa	Ottawa University	Coed	A. B. Cope, A. M.
St. Marys	St. Marys' College	Men	B. J. Rodmont, S. J.
Salina	Kansas Wesleyan University	Coed	Albert H. King, M. Ped.
Sterling	Sterling College	Coed	Vernon Van Patter, M. C. S.
Topeka	Washburn College	Coed	L. D. Whittemore, A. M.
Wichita	Fairmont College	Coed	Wm. H. Hayes, Ph. D.
Do	Friends University	Coed	Andrew K. Rule, A. M.
Winfield	Southwestern College	Coed	Mark Ewald, A. M.
KENTUCKY.			
Berea	Berea College	Coed	Cloyd N. McAllister, Ph. D.
Danville	Centre College	Men	Walter Ervin, A. M.
Georgetown	Georgetown College	Coed	Abbie L. Fuller, Ph. D.
Lexington	University of Kentucky	Coed	J. T. C. Noe, A. M.
Do	Transylvania College	Coed	Wm. C. Bower, A. M.
Louisville	University of Louisville	Coed	John L. Patterson, LL. D.
Winchester	Kentucky Wesleyan College	Coed	J. C. Lewis, A. M.
LOUISIANA.			
Baton Rouge	Louisiana State University and Agricultural and Mechanical College.	Coed	Delmar T. Powers, A. M.
Convent	Jefferson College	Men	J. Dunne, S. M.
New Orleans	H. Sophie Newcomb Memorial College	Women	John M. Fletcher, Ph. D.
Do	Loyola University	Men	Michael J. Walsh, S. J.
Pineville	Louisiana College	Coed	John G. Austin, A. M.
MAINE.			
Brunswick	Bowdoin College	Men	
Lewiston	Bates College	Coed	Robert A. F. McDonald, Ph. D.
Orono	University of Maine	Coed	Luther J. Pollard, A. M.
Waterville	Colby College	Coed	W. R. Wells, Ph. D.
MARYLAND.			
Annapolis	St. John's College	Men	Sidney S. Handy, A. M.
Baltimore	Goucher College	Women	Agnes L. Rogers, Ph. D.
Do	Johns Hopkins University	Coed	Edward F. Buchner, Ph. D.
Do	Morgan College (colored)	Coed	John W. Haywood, A. M.
Chestertown	Washington College	Coed	James W. Johns, A. B.
College Park	University of Maryland	Coed	H. F. Cotterman, A. M.
Emmitsburg	Mount St. Mary's College	Men	Edward B. Jordan, S. T. B.
Frederick	Hood College	Women	Elmer R. Hoke, A. M.
Lutherville	Maryland College for Women	Women	Marie McKinney,
New Windsor	Blue Ridge College	Coed	E. C. Bixler, Ph. D.
Westminster	Western Maryland College	Coed	Alvey M. Isanogle, A. B.
MASSACHUSETTS.			
Amherst	Massachusetts Agricultural College	Coed	Wm. R. Hart, A. M.
Boston	Boston University	Coed	Arthur H. Wilde, Ph. D.
Do	Simmons College	Women	Antoinette Roof.
Cambridge	Harvard University	Men	Henry W. Holmes, A. M.
Do	Radcliffe College	Women	Henry W. Holmes, A. M.
Chestnut Hill	Boston College	Men	James F. Mellyn, S. J.
Northampton	Smith College	Women	Harvey G. Townsend, Ph.D.
Norton	Wheaton College	Women	Walter O. McIntire, Ph. D.
South Hadley	Mount Holyoke College	Women	Colin A. Scott, Ph. D.
Tufts College	Tufts College	Coed	Douglas Waples, Ph. D.
Wellesley	Wellesley College	Women	Arthur O. Norton, A. M.
Worcester	Clark University	Men	Wm. H. Burnham, Ph. D.
Do	College of the Holy Cross	Men	James A. Mullen, S. J.
MICHIGAN.			
Adrian	Adrian College	Coed	O. R. Stilson, A. M.
Albion	Albion College	Coed	Emory L. Kuhnes, Ph. D.
Alma	Alma College	Coed	George B. Randels, Ph. D.
Ann Arbor	University of Michigan	Coed	Allen S. Whitney, A. B.
Berrien Springs	Emmanuel Missionary College	Coed	Dorothy E. White, A. B.
Detroit	University of Detroit	Men	Simon J. Nicolas, S. J.
East Lansing	Michigan Agricultural College	Coed	Walter H. French, M. S.
Hillsdale	Hillsdale College	Coed	D. G. Clancy, A. M.
Holland	Hope College	Coed	Egbert G. Winter, A. M.
Kalamazoo	Kalamazoo College	Coed	Herbert L. Stetson, LL. D., president.
Olivet	Olivet College	Coed	Olga B. Latham, A. B., acting.

XX.—HEADS OF DEPARTMENTS OF EDUCATION—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of head of department or school of education.
MINNESOTA.			
Collegeville	St. John's University	Men	Alexiue Hoffman, O. S. B.
Minneapolis	Augsburg Seminary	Men	R. B. Nell, A. M.
Do	University of Minnesota	Coed	Melvin E. Haggerty, Ph. D.
Northfield	Carleton College	Coed	Leal A. Headley, Ph. D.
Do	St. Olaf College	Coed	Julius Boraas, Ph. D.
St. Paul	College of St. Catherine	Women	John Seliskar, Ph. D.
Do	College of St. Thomas	Men	Joseph A. Schabert, A. M.
Do	Hamline University	Coed	George S. Innis, D. D.
Do	Macalester College	Coed	Andrew W. Anderson, A. M.
St. Peter	Gustavus Adolphus College	Coed	S. L. Reed, Ph. D.
Winona	College of St. Teresa	Women	Blanche Murphy, A. M.
MISSISSIPPI.			
Agricultural College	Mississippi Agricultural and Mechanical College.	Coed	A. B. Butts, Ph. D.
Blue Mountain	Blue Mountain College	Women	B. G. Lowrey, LL. D.
Brookhaven	Whitworth Female College	Women	Clara Chalmers, A. B.
Clinton	Mississippi College	Men	Wm. H. Weathersby, Ph. D.
Columbus	Mississippi State College for Women	Women	Anne L. Fant, A. M.
Grenada	Grenada College	Women	J. R. Countiss, A. B., president.
Holly Springs	Rust College (colored)	Coed	Nan E. Walton, B. A.
Jackson	Belhaven College	Women	Olive M. Jones, A. M.
Do	Milsaps College	Coed	Stuart G. Noble, Ph. D.
Meridian	Meridian College	Coed	L. R. Hogan, Ph. D.
University	University of Mississippi	Coed	J. C. Fant, Ph. D.
MISSOURI.			
Albany	Palmer College	Coed	A. W. Sparks, A. B.
Cameron	Missouri Wesleyan College	Coed	Emily Dexter, A. M.
Canton	Culver-Stockton College	Coed	George E. Breece, A. M.
Columbia	Christian College	Women	R. C. Abram, A. M.
Do	University of Missouri	Coed	Jesse H. Coursault, Ph. D.
Fayette	Central College	Coed	R. E. Hurt, A. M.
Do	Howard Payne College	Women	B. I. Lawrence, A. B.
Fulton	Synodical Female College	Women	Charlotte Isenay, A. M.
Do	Westminster College	Men	C. A. McPheeters, Ph. D.
Do	William Woods College	Women	Grace Y. Griffin, A. B.
Lexington	Central College for Women	Women	Agnes E. Hamilton, B. S.
Liberty	William Jewell College	Men	W. O. Lewis, Ph. D.
Marshall	Missouri Valley College	Coed	John J. Dynes, A. M.
Mexico	Hardin College	Women	T. P. Oakley, Ph. D.
Nevada	Cottey College	Women	Blanche Bowdle, A. M.
Parkville	Park College	Coed	William A. Cook, Ph. D.
St. Charles	Lindenwood College	Women	Lucinda de L. Templin, A. M.
St. Louis	St. Louis University	Men	Thomas F. Wallace, S. J.
Do	Washington University	Coed	Edgar J. Swift, Ph. D
Springfield	Drury College	Coed	Joseph T. Williams, Ph. D.
Tarkio	Tarkio College	Coed	Carl Guise, A. M.
Warrenton	Central Wesleyan College	Coed	Frank O. Spohrer, A. M.
MONTANA.			
Bozeman	Montana College of Agriculture and Mechanic Arts.	Coed	James O'Gorman, M. S.
Missoula	University of Montana	Coed	E. O. Sisson, Ph. D., president.
NEBRASKA.			
Bellevue	Bellevue College	Coed	Chas. A. S. Dwight, Ph. D.
Bethany	Cotner College	Coed	James F. Duncan, A. B.
College View	Union College	Coed	Milton P. Robison.
Crete	Doane College	Coed	A. G. Heyhoe, A. M.
Fremont	Midland College	Coed	Fred C. Waters, A. M.
Grand Island	Grand Island College	Coed	Arthur J. Bissinger, A. M.
Hastings	Hastings College	Coed	Frank E. Weyer, A. M.
Lincoln	University of Nebraska	Coed	Charles Fordyce, Ph. D.
Omaha	Creighton University	Men	Robert M. Kelley, S. J.
Do	University of Omaha	Coed	W. Gilbert James.
University Place	Nebraska Wesleyan University	Coed	B. E. McProud, A. M.
York	York College	Coed	C. E. Ashcraft, A. M.

XX.—HEADS OF DEPARTMENTS OF EDUCATION—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of head of department or school of education.
NEVADA.			
Reno	State University of Nevada	Coed	John W. Hall, A. M.
NEW HAMPSHIRE.			
Durham	New Hampshire College of Agriculture and Mechanic Arts.	Coed	Charles L. Simmers, B. A.
Hanover	Dartmouth College	Men	Riverda H. Jordan, Ph. D.
NEW JERSEY.			
Convent Station	College of St. Elizabeth	Women	Sister Regina Clare, B. S.
Kenilworth	Upsala College	Coed	A. L. Johnson, L. H. D.
New Brunswick	Rutgers College	Men	Charles H. Elliott, Ph. D.
NEW MEXICO.			
Albuquerque	University of New Mexico	Coed	Charles E. Hodgin, B. Pd.
State College	New Mexico College of Agriculture and Mechanic Arts.	Coed	James W. Clarkson, B. S.
NEW YORK.			
Albany	New York State College for Teachers	Coed	A. K. Beik, Ph. D.
Alfred	Alfred University	Coed	Mrs. Helena Piotrouska, A. M.
Brooklyn	Adelphi College	Women	James W. Park, A. M.
Do	St. Francis College	Men	Thomas J. McAvoy, A. M.
Do	St. John's College	Men	William E. Carter.
Buffalo	Canisius College	Men	Miles J. O'Mailia, S. J.
Do	University of Buffalo	Coed	Mary M. Lewis.
Canton	St. Lawrence University	Coed	Charles M. Rebert, A. M.
Clinton	Hamilton College	Men	William H. Squires, Ph. D.
Elmira	Elmira College	Women	John R. Tuttle, Ph. D.
Geneva	Hobart College	Coed	Foster P. Boswell, Ph. D.
Hamilton	Colgate University	Men	Melbourne S. Read, Ph. D. president.
Ithaca	Cornell University	Coed	Robert M. Ogden, Ph. D.
New Rochelle	College of New Rochelle	Women	John F. Condon, Ph. D.
New York	College of the City of New York	Men	Stephen P. Duggan, Ph. D.
Do	Columbia University	Coed	(3)
Do	Fordham University	Men	Michael Jessup, S. J.
Do	Hunter College of the City of New York.	Women	James M. Kieran, LL. D.
Do	Manhattan College	Men	F. J. Plattler, A. M.
Do	New York University	Coed	Thomas M. Balliet, Ph. D.
Do	Teachers College	Coed	James E. Russell, LL. D. dean.
Niagara University	Niagara University	Men	Francis Dodd, LL. D.
Rochester	University of Rochester	Coed	Louis A. Peekstein, Ph. D.
Syracuse	Syracuse University	Coed	Albert S. Hurst, Ph. D., acting.
Troy	Russell Sage College	Women	Katherine Kellas, Ph. B.
NORTH CAROLINA.			
Chapel Hill	University of North Carolina	Coed	Marcus C. S. Noble, Ph. D.
Charlotte	Biddle University (colored)	Men	J. W. Seabrook, A. M.
Do	Queens College	Women	
Davidson	Davidson College	Men	Archibald Currie, A. MM.
Durham	Trinity College	Coed	M. L. Lowery, A. M.
Elon College	Elon College	Coed	W. C. Wicker, D. D.
Greensboro	Greensboro College for Women	Women	David F. Nicholson, A. M.
Guilford College	Guilford College	Coed	L. Lea White, A. B.
Hickory	Lenoir College	Coed	Frank Field.
Raleigh	Meredith College	Women	E. McKee Highsmith, A. M.
Do	Shaw University	Coed	William L. Turner, A. M.
Wake Forest	Wake Forest College	Men	T. E. Cochran, A. M.
West Raleigh	North Carolina State College of Agriculture and Engineering.	Men	L. E. Cooke, M. S.
Wilson	Atlantic Christian College	Coed	F. F. Grim, A. M.
Winston-Salem	Salem Academy and College	Women	Grace E. Manson, A. M.
Red Springs	Flora Macdonald College	Women	Mrs. M. L. Sanderson, A. M.
NORTH DAKOTA.			
Agricultural College	North Dakota Agricultural College	Coed	Arland D. Weeks, A. M.
Fargo	Fargo College	Coed	Anna M. Tibbets, Ph. D.
Jamestown	Jamestown College	Coed	J. L. Golightly, A. M.
University	University of North Dakota	Coed	Joseph Kennedy, LL. D.

[3] See Teachers College.

XX.—HEADS OF DEPARTMENTS OF EDUCATION—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of head of department or school of education.
OHIO.			
Ada	Ohio Northern University	Coed	John Davison, D. Ped.
Alliance	Mount Union College	Coed	John B. Bowman, A. M.
Ashland	Ashland College	Coed	L. L. Garber, A. M.
Athens	Ohio University	Coed	W. W. McIntire, A. M.
Berea	Baldwin-Wallace College	Coed	Fletcher D. Ward, M. S.
Bluffton	Bluffton College	Coed	Samuel Burkhard, A. M.
Cedarville	Cedarville College	Coed	R. S. McIlhinney, Ph. D.
Cincinnati	University of Cincinnati	Coed	Wm. P. Burris, L. H. D.
Cleveland	St. Ignatius College	Men	Edward J. Bracken, A. M.
Do	Western Reserve University	Coed	G. Earlton Robinson.
Columbus	Capital University	Coed	Theophilus Mess, Ph. D.
Do	Ohio State University	Coed	George F. Arps, Ph. D.
Defiance	Defiance College	Coed	Edward L. Lawson, A. M.
Delaware	Ohio Wesleyan University	Coed	Arthur R. Mead, A. M.
Findlay	Findlay College	Coed	H. S. Brinser, M. Pd.
Granville	Denison University	Coed	Thomas A. Lewis, Ph. D.
Hiram	Hiram College	Coed	Joseph A. Baer, A. M.
Marietta	Marietta College	Coed	A. C. Watson, Ph. D.
New Athens	Franklin College	Coed	W. R. Cornetet, B. S.
New Concord	Muskingum College	Coed	J. G. Lowery, A. M.
Oberlin	Oberlin College	Coed	Edward A. Miller, Ph. D.
Oxford	Miami University	Coed	Jahn W. Heckert, Ph. D.
Do	Oxford College for Women	Women	L. Estelle Appleton, Ph. D.
Do	Western College for Women	Women	D. A. Groves, A. M.
Painesville	Lake Erie College	Women	Ethel G. Muir, Ph. D.
Rio Grande	Rio Grande College	Coed	W. G. Scarberry, A. B.
Springfield	Wittenberg College	Coed	T. Bruce Birch, Ph. D.
Tiffin	Heidelberg University	Coed	E. I. F. Williams, A. M.
Toledo	St. John's Univertity	Men	Francis P. Kemper, A. M.
Do	Toledo University	Coed	David W. Henry, A. M.
Westerville	Otterbein College	Coed	Edmund A. Jones, Ph. D.
Wilberforce	Wilberforce University (colored)	Coed	Gilbert Jones, Ph. D.
Wilmington	Wilmington College	Coed	Russell Olt, A. M.
Wooster	College of Wooster	Coed	Martin Remp, A. M.
Yellowsprings	Antioch College	Coed	Stephen F. Weston, Ph. D.
OKLAHOMA.			
Chickasha	Oklahoma College for Women	Women	I. E. Mott, A. M.
East End	Phillips University	Coed	M. L. Perkins, A. M.
Kingfisher	Kingfisher College	Coed	H. F. Harris, A. M.
Norman	University of Oklahoma	Coed	W. W. Phelan, Ph. D.
Oklahoma City	Oklahoma City College	Coed	W. H. Goodell, A. M.
Stillwater	Oklahoma Agricultural and Mechanical College.	Coed	Herbert P. Patterson, Ph. D
Tulsa	Henry Kendall College	Coed	L. S. McLeod, A. M.
OREGON.			
Albany	Albany College	Coed	Wallace H. Lee, LL. D.
Corvallis	Oregon Agricultural College	Coed	Edwin D. Ressler, A. M.
Eugene	University of Oregon	Coed	Henry D. Sheldon, Ph. D.
Forest Grove	Pacific University	Coed	Harold S. Tuttle, A. M.
McMinnville	McMinnville College	Coed	L. S. Shumaker, A. B.
Newberg	Pacific College	Coed	Lyra B. Miles, A. M.
Portland	Reed College	Coed	George Rebec, Ph. D.
Salem	Willamette University	Coed	Charles L. Sherman, Ph. D.
PENNSYLVANIA.			
Allentown	Cedar Crest College for Women	Women	Anna Mathis, A. B.
Do	Muhlenberg College	Men	Isaac M. Wright, Pd. D.
Annville	Lebanon Valley College	Coed	S. O. Grimm, A. M.
Beaver	Beaver College	Women	C. Mace Thomas, Ph. D.
Beaver Falls	Geneva College	Coed	Harry H. Wylie, Ph. D.
Bethlehem	Lehigh University	Men	Percy Hughes, Ph. D.
Do	Moravian College	Men	W. N. Schwarz, Ph. D.
Do	Moravian Seminary and College for Women.	Women	Percy Hughes, Ph. D.
Bryn Mawr	Bryn Mawr College	Women	Matilde Castro, Ph. D.
Carlisle	Dickinson College	Coed	Wilbur H. Norcross, Ph. D.
Chambersburg	Wilson College	Women	Elsie Murray, Ph. D.
Collegeville	Ursinus College	Coed	G. W. Omwake, Pd. D.
Gettysburg	Pennsylvania College	Coed	Charles F. Sanders, D. D.
Greenville	Thiel College	Coed	Luther Malmberg, A. M.
Grove City	Grove City College	Coed	Charles A. Platt, Ph. D.

XX.—HEADS OF DEPARTMENTS OF EDUCATION—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of head of department or school of education.
PENNSYLVANIA—con.			
Huntingdon	Juniata College	Coed	C. C. Ellis, Ph. D.
Lancaster	Franklin and Marshall College	Men	P. M. Harbold, Sc. D.
Lewisburg	Bucknell University	Coed	Llewellyn Phillips, D. D.
Lincoln University	Lincoln University (colored)	Men	George Johnson, Ph. D.
Meadville	Allegheny College	Coed	Frederick G. Henke, Ph. D.
Mechanicsburg	Irving Female College	Women	E. E. Campbell, Ph. D., president.
Myerstown	Albright College	Coed	Virgil C. Zener, A. M.
New Wilmington	Westminster College	Coed	John A. Shott, A. M.
Philadelphia	Temple University	Coed	George E. Walk, Ph. D.
Do	University of Pennsylvania	Coed	Frank P. Graves, LL. D.
Pittsburgh	Carnegie Institute of Technology	Coed	Edward K. Strong, Ph. D.
Do	Pennsylvania College for Women	Women	Edna I. Winters, A. M.
Do	University of Pittsburgh	Coed	Will G. Chambers, Litt. D.
Selinsgrove	Susquehanna University	Coed	John I. Woodruff, Litt. D.
State College	Pennsylvania State College	Coed	David A. Anderson, Ph. D.
Swarthmore	Swarthmore College	Coed	Frederick Doeden, Ph. D.
Villanova	Villanova College	Men	Joseph A. Hickey, D. D.
Washington	Washington and Jefferson College	Men	Edward M. Weyer, Ph. D.
Waynesburg	Waynesburg College	Coed	N. A. Danowsky, A. M.
PORTO RICO.			
San Juan	University of Porto Rico	Coed	A. G. Steele, Ph. D.
RHODE ISLAND.			
Kingston	Rhode Island State College	Coed	Charles Carroll, Ph. D.
Providence	Brown University	Coed	Walter B. Jacobs, A. M.
SOUTH CAROLINA.			
Clemson College	Clemson Agricultural College	Men	W. G. Grandall.
Clinton	Presbyterian College of South Carolina	Coed	Daniel J. Brimm, D. D.
College Place	Columbia College	Women	J. L. Stokes, D. D.
Columbia	Benedict College (colored)	Coed	Mabel Knight, B. Bd.
Do	Chicora College for Women	Women	Jean Latimer.
Do	University of South Carolina	Coed	Patterson, Wardlaw, LL. D.
Greenville	Greenville Woman's College	Women	Eleanor A. Gardner, A. M.
Do	Furman University	Men	Lueco Gunter, A. M.
Greenwood	Lander College	Women	Elizabeth Alexander, A. B.
Newberry	Newberry College	Coed	S. J. Derrick, A. M., president.
Spartanburg	Converse College	Women	Melvin A. Martin, Ph. D.
Do	Wofford College	Men	Arthur G. Rembert, LL. D.
SOUTH DAKOTA.			
Brookings	South Dakota State College of Agriculture and Mechanic Arts.	Coed	C. C. Stech, A. M.
Huron	Huron College	Coed	Harold G. Lawrence, A. M.
Mitchell	Dakota Wesleyan University	Coed	E. K. Hillbrand.
Sioux Falls	Sioux Falls College	Coed	A. W. Fauquet, A. M.
Vermilion	University of South Dakota	Coed	Wm. A. Cook, Ph. D.
Yankton	Yankton College	Coed	William J. McMurtry, LL. D.
TENNESSEE.			
Bristol	King College	Men	F. W. DeFriece, A. M.
Chattanooga	University of Chattanooga	Coed	John A. Thackston, Ph. D.
Clarksville	Southwestern Presbyterian University	Men	Wm. Dinwiddie, LL. D.
Greenville	Tusculum College	Coed	A. C. Holt, A. M.
Harrogate	Lincoln Memorial University	Coed	Thomas B. Ford, A. M.
Jackson	Union University	Coed	Henry E. Watters, D. D., president.
Jefferson City	Carson and Newman College	Coed	J. D. Everett, A. M.
Knoxville	Knoxville College (colored)	Coed	J. K. Millin, A. M.
Do	University of Tennessee	Coed	John A. Thackston, Ph. D.
Lebanon	Cumberland University	Coed	C. C. Lemon, A. M.
Maryville	Maryville College	Coed	Jasper C. Barnes, Ph. D.
Milligan	Milligan College	Coed	Willis B. Boyd, A. M.
Murfreesboro	Tennessee College	Women	C. M. Faithfull, A. M.
Nashville	Fisk Unibersity (colored)	Coed	Belle R. Parmenter, B. Ped.
Do	George Peabody College for Teachers	Coed	Bruce R. Payne, LL. D., president.
Spencer	Burritt College	Coed	A. S. Chambers, A. M.
Washington College	Washington College	Coed	Adams Philips, A. B.

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XX.—HEADS OF DEPARTMENTS OF EDUCATION—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of head of department or school of education.
TEXAS.			
Abilene	Simmons College	Coed	Oscar H. Cooper, LL. D.
Austin	University of Texas	Coed	Wm. S. Sutton, LL. D.
Belton	Baylor Female College	Women	T. H. Hunter, A. M.
Brownwood	Daniel Baker College	Coed	John Power.
Do	Howard Payne College	Coed	Glynn A. Brooks.
College Station	Agricultural and Mechanical College of Texas.	Men	Martin L. Hayes, A. M.
Dallas	Southern Methodist University	Coed	Claude A. Nichols, Ph. D.
Denton	College of Industrial Arts	Women	R. J. Turrentine, A. M.
Fort Worth	Texas Woman's College	Women	Elzy D. Jennings, A. M.
Do	Texas Christian University	Coed	Raymond A. Smith, A. M.
Georgetown	Southwestern University	Coed	Oscar A. Ullrich.
Houston	Rice Institute	Coed	R. A. Tsanoff, Ph. D.
Marshall	Bishop College (colored)	Coed	Mrs. John A. Talcott.
San Antonio	Our Lady of the Lake College	Women	Sister Antonina, A. M.
Sherman	Austin College	Men	J. J. Delaney, A. M.
Tehuacana	Westminster College	Coed	E. N. Comfort, A. M.
Waco	Baylor University	Coed	Arthur J. Hall, Ph. D.
Waxahachie	Trinity University	Coed	W. M. Liggett, A. M.
UTAH.			
Salt Lake City	University of Utah	Coed	Milton Bennion, A. M.
VERMONT.			
Burlington	University of Vermont and State Agricultural College.	Coed	Herbert H. Foster, Ph. D.
Middlebury	Middlebury College	Coed	Edward D. Collins, Ph. D.
VIRGINIA.			
Blacksburg	Virginia Agricultural and Mechanical College and Polytechnic Institute.	Men	Dabney S. Lancaster, M. S.
Bridgewater	Bridgewater College	Coed	W. T. Sanger, Ph. D.
Charlottesville	University of Virginia	Coed	John L. Monahan, Ph. D.
Lynchburg	Lynchburg College	Coed	L. D. Burton, A. M.
Emory	Emory and Henry College	Coed	B. B. Bassett, Ph. D.
Lynchburg	Randolph-Macon Woman's College	Women	Ezra B. Crooks, Ph. D.
Richmond	University of Richmond	Coed	D. B. Bryan, Ped. D.
Salem	Roanoke College	Men	F. V. N. Painter, Litt. D.
Do	Elizabeth College	Women	Irene B. Palmer.
Williamsburg	College of William and Mary	Men	H. E. Bennett, A. B.
WASHINGTON.			
Pullman	State College of Washington	Coed	Alfred A. Cleveland, Ph. D.
Seattle	University of Washington	Coed	Frederick E. Bolton, Ph. D.
Tacoma	College of Puget Sound	Coed	Frederick Gjesdahl, A. M.
Walla Walla	Whitman College	Coed	Enos L. Keezel, A. M.
WEST VIRGINIA.			
Bethany	Bethany College	Coed	J. Allen Hunter, Ph. D.
Buckhannon	West Virginia Wesleyan College	Coed	R. N. Boardman, Ph. D.
Elkins	Davis and Elkins College	Coed	W. H. Wilcox, Ph. M.
Morgantown	West Virginia University	Coed	Jasper N. Deahl, Ph. D.
Salem	Salem College	Coed	
WISCONSIN.			
Appleton	Lawrence College	Coed	Herbert C. Cooley, Ph. D.
Beloit	Beloit College	Coed	Clarence L. Clarke, A. M.
Madison	University of Wisconsin	Coed	V. A. C. Henmon, Ph. D.
Milwaukee	Milwaukee-Downer College	Women	Mina Kerr, Ph. D.
Ripon	Ripon College	Coed	Wm. J. Mutch, Ph. D.
Sinsinawa	St. Clara College and Academy	Women	Sister M. Ruth, Ph. D.
Watertown	Northwestern College	Men	J. H. Ott, Ph. D.
Waukesha	Carroll College	Coed	James E. Rogers, Ph. D.
WYOMING.			
Laramie	University of Wyoming	Coed	C. R. Maxwell, A. M.

XXI.—PRESIDENTS OR DEANS OF SCHOOLS OF THEOLOGY.

Location.	Name of institution.	President or dean.
St. Bernard, Ala.	St. Bernard College and Abbey (R. C.).	Bernard Menges, D. D., O. S. B.
Selma, Ala.	Payne University Theological Department (A. M. E.).	Robert Ernest Brooks, D. D.
Talladega, Ala.	Talladega College Theological Seminary (Cong.).	James P. O'Brien, D. D.
Tuscaloosa, Ala.	Stillman Institute (colored) (Presb.).	Rev. R. K. Timmons.
Little Rock, Ark.	Arkansas Baptist College School of Theology.	Joseph A. Booker, D. D.
Do.	St. John's Diocesan Seminary (R. C.).	Winand H. Aretz, S. T. D.
North Little Rock, Ark.	Jackson Theological Seminary of Shorter College (A. M. E.).	Rev. H. G. Montgomery.
Berkeley, Calif.	Berkeley Baptist Divinity School.	Claiborne M. Hill, D. D.
Do.	Pacific School of Religion (undenominational).	William Frederick Bade, Ph. D.
Do.	Pacific Unitarian School for the Ministry.	Earl Morse Wilbur, D. D.
Los Angeles, Calif.	University of Southern California, Maclay College of Theology (M. E.).	Ezra A. Healy, S. T. D.
Menlo Park, Calif.	St. Patrick's Seminary (R. C.).	Henry A. Ayrinhac, S. S.
San Anselmo, Calif.	San Francisco Theological Seminary (Presb.)	Warren Hall Landon, D. D.
San Francisco, Calif.	California Bible College (Disc.).	Dennison A. Russell, D. D.
Do.	Church Divinity School of the Pacific (P. E.).	William F. Nichols, D. D.
Denver, Colo.	Iliff School of Theology (M. E.).	James A. Beebe, D. D.
Hartford, Conn.	Hartford Seminary Foundation (interdenominational).	William Douglas Mackenzie, D. D., LL. D.
Middletown, Conn.	Berkeley Divinity School (P. E.).	William Palmer Ladd, D. D.
New Haven, Conn.	Yale University Divinity School (nonsectarian).	Charles Reynolds Brown, D. D.,
Washington, D. C.	Catholic University of America, School of Sacred Sciences (R. C.).	Very Rev. John A. Ryan, S. T. D
Do.	Howard University Theological Department (colored) (interdenominational)	Davie Butler Pratt, D. D.
Washington, D. C. (Takoma Park).	Washington Missionary College, School of Theology (Seventh Day Advent.).	Rev. Walter C. Moffet.
St. Leo, Fla.	St. Leo College and Abbey (R. C).	Charles H. Mohr, O. S. B., D. D.
Atlanta, Ga.	Atlanta Theological Seminary (Cong.).	Frank R. Shipman, B. D.
Do.	Emory University, Candler School of Theology (M. E. Church South).	Franklin N. Parker, D. D.
Do.	Gammon Theological Seminary (colored) (M. E.).	Philip M. Watters, D. D.
Do.	Morehouse College, Divinity School (colored) (Bapt.).	C. C. Smith, D. D.
Do.	Morris Brown University, Turner Theological Seminary (A. M. E.).	P. W. Greatheart, D. D.
Aurora, Ill.	Aurora College Biblical Department (Advent Chris.).	Orrin R. Jenks, D. D.
Chicago, Ill.	Bethany Bible School.	Albert C. Wieand, D. D.
Do.	Chicago Theological Seminary (Cong.).	Ozora Stearns Davis, D. D.
Chicago (Maywood), Ill.	Evangelical Lutheran Theological Seminary at Chicago.	Elmer F. Krauss, D. D.
Chicago, Ill.	McCormick Theological Seminary (Presb.).	James G. K. McClure, D. D., LL. D.
Do.	University of Chicago Divinity School (Bapt.)	Shailer Mathews, D. D.
Do.	Western Theological Seminary (P. E.).	William C. De Witt, S. T. D.
Evanston, Ill.	Garrett Biblical Institute, Northwestern University (M. E.).	Charles M. Stuart, D. D., LL. D
Do.	Norwegian-Danish Theological Seminary, Northwestern University (M. E.).	Nels E. Simonsen, D. D.
Do.	Swedish Theological Seminary, Northwestern University (M. E.).	F. A. Lundberg, D. D.
Greenville, Ill.	Greenville College, Department of Theology (Free Meth.).	John La Due, A. M.
Naperville, Ill.	Evangelical Theological Seminary (Ev. Asso.)	G. B. Kimmel, D. D.
Rock Island, Ill.	Augustana College and Theological Seminary (Ev. Luth.).	Gustav Andreen, D. D., R. N. O., K. V. O.
Springfield, Ill.	Concordia Theological Seminary (Ev. Luth. Synod of Missouri, Ohio, and other States).	Rev. R. D. Biedermann.
Merom, Ind.	Union Christian College Biblical Department (Chris.).	Charles B. Hershey, D. D.
St. Meinrad, Ind.	St. Meinrad Seminary (Ecclesiastic) (R. C.).	Very Rev. Albert Kleber, O. S. B., rector.
Upland, Ind.	Reade Theological Seminary, Theological Department of Taylor University (M. E.).	M. Vayinger, D. D.
Des Moines, Iowa.	Drake University College of the Bible (Chris.)	Jesse C. Caldwell, B. D., LL. D.
Do.	Grand View College Theological School (Luth.).	Carl P. Höjbjerg.
Dubuque, Iowa.	Theological Seminary at Dubuque University (Presb.).	Cornelius M. Steffens, D. D.
Do.	Wartburg Theological Seminary (Ev. Luth.)	M. Fritschel, D. D.
Kansas City, Kans.	Kansas City Baptist Theological Seminary.	Philip W. Crannell, D. D.
Do.	Kansas City University College of Theology Meth. Prot.).	Herbert T. Stephens, D. D.
Kingswood, Ky.	Department of Theology, Christian Ethics and Metaphysics, Kingswood College.	Rev. W. B. Dunkum.

XXI.—Presidents or Deans of Schools of Theology—Continued.

Location.	Name of institution.	President or dean.
Lexington, Ky.	College of the Bible affiliated with Transylvania College (Disc.).	Richard H. Crossfield, LL. D.
Louisville, Ky.	Presbyterian Theological Seminary of Kentucky.	Charles R. Hemphill, D. D., LL. D.
Do	Southern Baptist Theological Seminary	Edgar Y. Mullins, D. D., LL. D.
Do	State University Theological Department (colored) (Bapt.).	C. H. Parrish, D. D., LL. D.
Bangor, Me	Bangor Theological Seminary (Cong.)	David N. Beach, D. D.
Baltimore, Md	St. Mary's Seminary (R. C.)	E. R. Dyer, S. S., D. D.
Emmitsburg, Md	Mount St. Mary College, Ecclesiastical Seminary (R. C.).	B. J. Bradley, LL. D.
Westminister, Md	Westminister Theological Seminary (Meth. Prot.).	Hugh Latimer Elderdice, D. D., LL. D.
Woodstock, Md	Woodstock College (R. C.)	William F. Clark, S. J.
Boston, Mass	Boston University School of Theology (M. E.).	James A. Bebee, D. D.
Boston (Brighton), Mass.	St. John's Boston Ecclesiastical Seminary (R. C.).	John B. Peterson, Ph. D.
Cambridge, Mass	Andover Theological Seminary (Cong.)	John W. Planter, D. D., acting president.
Do	Episcopal Theological School	Henry Bradford Washburn, D. D.
Do	Harvard University Divinity School (Nonsect.).	William Wallace Fenn, D. D.
Do	New-Church Theological School (Ch. of N. Jeru.).	Rev. William L. Worcester.
Newton Centre, Mass	Newton Theological Institution (Bapt.)	George Edwin Horr, D. D., LL. D.
Tufts College, Mass	Tufts College, Crane Theological School (Univ.).	Lee S. McCollester, D. D.
Berrien Springs, Mich	Emmanuel Missionary College Theological School.	T. M. French.
Grand Rapids, Mich	Theological School and Calvin College (Chris. Ref. Ch.).	Rev. J. J. Hiemenga.
Hancock, Mich	Suomi College and Theological Seminary (Finnish Ev. Luth.)	John Wargelin, A. B.
Holland, Mich	Western Theological Seminary (Ref. Ch. in Amer.).	James F. Zwemer, D. D.
Owosso, Mich	Bible Holiness Seminary School of Theology	Rev. C. G. Taylor.
Collegeville, Minn	St. John's University Ecclesiastical Seminary (R. C.).	Rt. Rev. Peter Engel, O. S. B.
Faribault, Minn	Seabury Divinity School (P. E.)	Frederick F. Kramer, Ph. D., D. D.
Minneapolis, Minn	Augsburg Seminary (Ev. Luth.)	George Sverdrup, M. A.
St. Paul, Minn	Bethel Theological Seminary (Bapt.)	G. Arvid Hagstrom, D. D.
Do	Phalen Luther Seminary	H. Ernst, D. D.
Do	St. Paul Theological Seminary (R. C.)	Francis J. Schaefer, D. D.
St. Paul (St. Anthony Park), Minn.	Luther Theological Seminary	Marcus Olaus Böckman, D. D.
Columbia, Mo	Bible College of Missouri	Rev. Granville D. Edwards.
Canton, Mo	School of Religion in Culver-Stockton College.	Henry B. Robison, Ph. D.
St. Louis, Mo	Concordia Theological Seminary (Ev. Luth.)	Francis Pieper, D. D.
Do	Eden Theological Seminary of the Evangelical Church of North America.	S. D. Press.
Do	St. Louis University School of Divinity (R. C.)	Francis J. O'Boyle, S. J.
St. Louis, Mo. (University City).	The Xenia Theological Seminary (United Presb.)	Joseph Kyle, D. D., LL. D.
Warrenton, Mo	Central Wesleyan College German Theological Seminary (M. E.).	E. S Havighurst, D. D.
Webster Groves, Mo	Kenrick Theological Seminary (R. C.)	M. S. Ryan, C. M., D. D.
Blair, Nebr	Dana College, Trinity Seminary (Ev. Luth.)	Rev. L. A. Laursen.
Fremont, Nebr	Western Theological Seminary of Ev. Luth. Church, Midland College.	Holmes Dysinger, D. D., LL. D.
Omaha, Nebr	Presbyterian Theological Seminary	Albert B. Marshall, D. D., LL. D.
Bloomfield, N. J	Bloomfield Theological Seminary (Presb.)	Harry E. Richards, M. D.
Madison, N. J	Drew Theological Seminary (M. E.)	Ezra Squier Tipple, D. D.
New Brunswick, N. J	Theological Seminary of the Reformed Church in America.	J. Preston Searle, D. D.
Princeton, N. J	Princeton Theological Seminary of the Presbyterian Church.	J. Ross Stevenson, D. D., LL. D.
South Orange, N. J	Diocesan Seminary of the Immaculate Conception, Seton Hall College (R. C.)	Mgr. James F. Mooney.
Alfred, N. Y	School of Religion at Alfred University (7th Day Bapt.)	Arthur E. Main, D. D.
Auburn, N. Y	Auburn Theological Seminary (Presb.)	George B. Stewart, D. D., LL. D.
Brooklyn, N. Y	St. John's College Diocesan Theological Seminary (R. C.).	J. W. Moore, C. M.
Buffalo, N. Y	German Martin Luther Seminary	Rudolph Grabau.

XXI.—Presidents or Deans of Schools of Theology—Continued.

Location.	Name of institution.	President or dean.
Canton, N. Y	Canton Theological School of St. Lawrence University (Univ.).	John Murray Atwood, D. D.
Esopus, N. Y	Mount St. Alphonsus Theological Seminary, Redemptorist College (R. C.).	Florian J. Reichert, C. SS. R.
Geneva, N. Y	De Lancy Divinity School (P. E.)	G. Sherman Burrows, D. D., warden.
Hamilton, N.Y	Theological Seminary, Colgate University (nonsect.).	John F. Vichert, D. D.
Hartwick Seminary, N. Y.	Hartwick Seminary (Ev. Luth.)	Frank Wolford, D. D.
Houghton, N. Y	Houghton Wesleyan Methodist Theological Seminary.	James S. Luckey.
New York, N. Y	Bible Teachers Training School (interdenominational).	Wilbert W. White, D. D.
Do	General Theological Seminary of the Protestant Episcopal Church.	Hughell E. W. Fosbroke, D. D.
Do	Jewish Theological Seminary of America	Cyrus Adler, Ph. D., acting president.
Do	Union Theological Seminary (interdenominational).	Arthur C. McGiffert, D. D., LL. D.
Niagara University, N. Y.	Niagara University Seminary of Our Lady of Angels (R. C.).	W. E. Katzenberger, C. M.
North Chili, N. Y	A. M. Chesbrough Seminary (Free Meth.)	Rev. W. R. Reynolds, principal.
Rochester, N. Y	Rochester Theological Seminary (Bapt.)	Clarence A. Barbour, D. D.
Do	St. Bernard's Theological Seminary (R. C.).	James J. Hartley, D. D., rector.
St. Bonaventure, N. Y.	St. Bonaventure Seminary and College (R. C.).	Alexander M. Hickey, O. F. M.
Yonkers, N. Y	St. Joseph's Seminary, Cathedral College (R. C.).	John P. Chidwick, D. D.
Ayden, N. C	Ayden Seminary (Free Will Bapt.)	J. E. Sawyer, A. B.
Belmont, N. C	Belmont Abbey Seminary (R. C.)	Rt. Rev. Leo Haid, O. S. B. D. D.
Charlotte, N. C	Biddle University School of Theology (colored) (Presb.).	H. L. McCrorey, D. D.
Raleigh, N. C	Shaw University Theological School (colored) (Bapt.).	Rev. Joseph L. Peacock.
Salisbury, N. C	Hood Theological Seminary of Livingstone College (A. M. E. Z.).	William O. Carrington, D. D.
Ashland, Ohio	Ashland College, Theological Seminary (Brethren).	Edwin E. Jacobs, Ph. D.
Berea, Ohio	Baldwin-Wallace College, Nast Theological Seminary (M. E.).	Frederic Cramer, D. D.
Carthagena, Ohio	St. Charles Theological Seminary (R. C.)	Very Rev. Boniface Russ, C. PP. S.
Cincinnati, Ohio	Hebrew Union College	Kaufmann Kohler, Ph. D.
Do	Lane Theological Seminary (Presb.)	William McKibbin, D. D., LL. D.
Cincinnati (Mt. Washington Station, 1).	Mount St. Mary's Seminary of the West (R. C.).	Rt. Rev. Mgr. Francis J. Beckman, S. T. D.
Cleveland, Ohio	St. Mary's Theological Seminary (R. C.)	Very Rev. James A. McFadden, rector.
Columbus, Ohio	Evangelical Lutheran Theological Seminary, Capital University.	Theodore Mees, D. D.
Dayton, Ohio	Bonebrake Theological Seminary (U. Breth.)	Josiah P. Landis, Ph. D., D. D.
Do	Central Theological Seminary of the Reformed Church in the United States.	Henry J. Christman, D. D.
Findlay, Ohio	Findlay College, Department of Theology (Church of God).	William Harris Guyer, D. D.
Gambier, Ohio	Kenyon College Divinity School (P. E.)	William Foster Peirce, D. D., acting dean.
Oberlin, Ohio	Graduate School of Theology of Oberlin College (Nonsect.).	Edward Increase Bosworth, D. D.; George Walter Fiske, Ph. D.
Springfield, Ohio	Wittenberg College, Hamma Divinity School (Ev. Luth.).	David H. Bauslin.
Wilberforce, Ohio	Wilberforce University, Payne Theological Seminary (A. M. E.).	George F. Woodson, D. D.
Eugene, Oreg	Eugene Bible University (Chris. or Disc.)	Eugene C. Sanderson, D. D., LL. D.
Salem, Oreg	Kimball School of Theology	Henry J. Talbott, D. D.
Beatty, Pa	St. Vincent's Seminary (R. C.)	Leander Schnerr, O. S. B.
Bethlehem, Pa	Moravian College Theological Seminary	J. Taylor Hamilton, D. D.
Bryn Athyn, Pa	The Academy of the New Church, Theological Seminary (Ch. of N. Jeru.).	Rt. Rev. N. D. Pendleton.
Chester, Pa	Crozer Theological Seminary (Bapt.)	Milton G. Evans, D. D., LL. D.
Gettysburg, Pa	Theological Seminary of the General Synod of Ev. Luth. Church in United States.	J. A. Singmaster, D. D.
Huntingdon, Pa	Juniata College, School of Theology (Ch. of the Breth.).	Tobias T. Myers, D. D.
Lancaster, Pa	Theological Seminary of the Reformed Church in the United States.	George W. Richards, D. D.

XXI.—PRESIDENTS OR DEANS OF SCHOOLS OF THEOLOGY—Continued.

Location.	Name of institution.	President or dean.
Lincoln University, Pa.	Lincoln University Theological Department (Presb.) (colored).	J. B. Rendall, D. D.
Meadville, Pa.	Meadville Theological School (Unita.)	Franklin C. Southworth, D. D., LL. D.
Overbrook, Pa.	St. Charles Borromeo Seminary (R. C.)	Rt. Rev. Mgr. Edmond J. Fitz Maurice, D. D., rector.
Philadelphia (Mount Airy), Pa.	Lutheran Theological Seminary at Philadelphia.	Henry Eyster Jacobs, D. D.
Philadelphia, Pa.	Divinity School of the Protestant Episcopal Church.	George G. Bartlett, S. T. D.
Philadelphia (Germantown), Pa.	St. Vincent Seminary (R. C.)	Martin J. B Coke, C. M., rector.
Philadelphia, Pa.	Temple University, School of Theology (Nonsect.).	Walter B. Shumway, D. D
Pittsburgh, Pa.	Pittsburgh Theological Seminary (United Presb.).	John McNaugher, D. D., LL. D.
Do.	Reformed Presbyterian Theological Seminary.	Richard Cameron Wylie, D. D., LL. D.
Do.	Western Theological Seminary (Presb.)	James A. Kelso, Ph. D., D D.
Selinsgrove, Pa.	Susquehanna University School of Theology (Ev. Luth.).	Franklin P. Manhart, D.
Villanova, Pa.	Villanova College, Augustinian Scholastic Department (R. C.).	Joseph A. Hickey, O. S. A. J. C. D., regent of studies.
Columbia, S. C.	Allen University, Dickerson Theological Seminary (A. M. E.).	I. H. Alston, B. D.
Do.	Columbia Theological Seminary (Presb.)	Thornton Whaling, D. D.
Do.	Southern Lutheran Theological Seminary	Andrew G. Voigt, D. D., LL. D.
Due West, S. C.	Erskine Theological Seminary (A.R. Presb.).	F. Y. Pressly, D. D.
Jackson, Tenn.	Lane College Theological School (Colo. M. E.).	J. F. Lane, Ph. D.
Kimberlin Heights, Tenn.	Johnson Bible College	Ashley Sidney Johnson, LL. D.
Knoxville, Tenn.	Knoxville College Theological School (colored) (Un. Presb.).	J. Kelly Giffin, D. D.
Nashville, Tenn.	Vanderbilt University School of Religion (nonsectarian).	O. E. Brown, D. D.
Sewanee, Tenn.	University of the South Theological Department (P. E.).	Cleveland Keith Benedict, D. D.
Austin, Tex.	Austin Presbyterian Theological Seminary	Thomas W. Currie, B. D., chairman of faculty.
Dallas, Tex.	School of Theology, Southern Methodist University.	Hoyt M. Dobbs, D. D.
Fort Worth, Tex.	Southwestern Baptist Theological Seminary.	Lee R. Scarborough, D. D.
Do.	Brite College of the Bible, Texas Christian University.	Colby D. Hall, A. M.
Marshall, Tex.	Bishop College Theological Department (colored) (Bapt.).	Charles H. Maxson, B. Di.
Peniel, Tex.	Peniel College Department of Theology (Nazarine).	Prof. Charles A. McConnell.
Seguin, Tex.	Guadalupe College, Department of Theology (colored) (Bapt.).	
Tyler, Tex.	Texas College, Theological Department (colored M. E.).	Rev. D. C. Fowler, theological teacher.
Waco, Tex.	Paul Quinn College, Department of Theology (A. M. A.).	Isaac M. Burgan, D. D.
Bridgewater, Va.	Bridgewater College Bible Department (Breth.).	William T. Sanger, Ph. D.
Lynchburg, Va.	Virginia Theological Seminary and College (Bapt.).	Robert C. Woods, D. D.
Petersburg, Va.	Bishop Payne Divinity School (P. E.)	C. B. Bryan, D. D.
Richmond, Va.	Union Theological Seminary in Virginia (Presb.).	Walter W. Moore, D. D., LL. D.
Do.	Virginia Union University Theological Department (colored) (Bapt.).	William J. Clark, B. D.
Theological Seminary, Va	Theological Seminary of the Protestant Episcopal Church in Virginia.	Berryman Green, D. D.
Spokane, Wash.	Mount St. Michael's Divinity School (R. C.).	William J. Benn, S. J., rector.
Bethany, W. Va.	Bethany College, School of Religion (Disc.).	Cloyd Goodnight, A. M.
Nashotah, Wis.	Nashotah House (Episcopal)	Edward A. Larrabee, D. D.
Oconomowoc, Wis.	College of the Immaculate Conception Theological School (R. C.).	Thomas P. Brown, C. SS. R. rector.
Plymouth, Wis.	The Mission House of the Reformed Church.	E. A. Hofer, D. D.
St. Francis, Wis.	Provincial Seminary of St. Francis de Sales (R. C.).	Joseph Rainer, V. G.
Wauwatosa, Wis.	Evangelical Lutheran Theological Seminary.	John Schaller.

XXII.—PRESIDENTS OR DEANS OF SCHOOLS OF LAW.

Location.	Name of institution.	President or dean.
University, Ala	University of Alabama, Law Department	Albert J. Farrah, LL. B.
Tucson, Ariz	University of Arizona, School of Law	Samuel Marks Fegtly, LL. B., head professor.
Little Rock, Ark	Arkansas Law School	John H. Carmichael, LL. B.
Berkeley, Calif	University of California School of Jurisprudence.	William Carey Jones, M. A., director.
Los Angeles, Calif	University of Southern California College of Law.	Frank M. Porter, LL. M.
Do	Southwestern University, School of Law	Arthur J. Abbott, J. D.
San Francisco, Calif	Hastings College of Law, University of California.	Maurice E. Harrison, J. D.
Do	Law Department of St. Ignatius University.	Matt. I. Sullivan, LL. D.
Do	San Francisco Law School	James A. Ballentine, A. B.
Do	San Francisco Young Men's Christian Association Law School.	J. E. White.
Santa Clara, Calif	University of Santa Clara Institute of Law	Clarence C. Coolidge, J. D.
Stanford University, Calif.	Leland Stanford Junior University, Law School.	Charles A. Huston, J. D., S. J. D.
Boulder, Colo	University of Colorado, School of Law	John D. Fleming, LL. D.
Denver, Colo	University of Denver Law School	George C. Manly, LL. B.
New Haven, Conn	Yale University School of Law	Thomas Walter Swan, LL. B.
Washington, D. C	Catholic University of America School of Law.	Thomas C. Carrigan, Ph. D., LL. D.
Do	Georgetown University School of Law	George E. Hamilton, LL. D.
Do	George Washington University Law School.	Merton Le Roy Ferson, LL. B.
Do	Howard University School of Law (colored).	Benjamin F. Leighton, LL. D.
Do	National University Law School	Charles F. Carusi, LL. D.
Do	Washington College of Law	Emma M. Gillett, LL. M.
Deland, Fla	John B. Stetson University College of Law	Richard A. Rasco, LL. B.
Gainesville, Fla	University of Florida College of Law	Harry R. Trusler, LL. B.
Athens, Ga	University of Georgia, Law Department	Sylvanus Morris, LL. D.
Atlanta, Ga	Atlanta Law School	Hamilton Douglas, Ph. M., LL. B.
Do	Emory University, Lamar School of Law	Samuel C. Williams, LL. B.
Macon, Ga	Mercer University Law School	William H. Felton, B. L..
Moscow, Idaho	University of Idaho College of Law	O. P. Cockerill, LL. B..
Bloomington, Ill	Illinois Wesleyan University, Bloomington Law School.	Charles L. Capen, A. M.
Chicago, Ill	Chicago Law School, Law Department, Midland University.	John J. Tobias, LL. B., chancellor.
Do	Chicago-Kent Law School	Webster H. Burke, LL. B.
Do	De Paul University Law School	Francis X. Busch, LL. D.
Do	Hamilton College of Law	John H. Cummings, LL. B.
Do	John Marshall Law School	Edward T. Lee, LL. B.
Do	Loyola University College of Law	Arnold D. McMahon, LL. D., acting dean.
Do	Northwestern University Law School	John H. Wigmore, LL. D.
Do	University of Chicago Law School	James Parker Hall, LL. B.
Urbana, Ill	University of Illinois College of Law	Henry W. Ballantine, LL. B.
Bloomington, Ind	Indiana University School of Law	Charles M. Hepburn, LL. D.
Indianapolis, Ind	Benjamin Harrison Law School	William R. Forney, LL. B.
Do	University of Indianapolis, Indiana Law School.	James A. Rohbach, LL. D.
Notre Dame, Ind	University of Notre Dame, Law Department	William Hoynes, LL. D.
Valparaiso, Ind	Valparaiso University Law School	M. J. Bowman, jr., LL. B.
Des Moines, Iowa	Drake University College of Law	Charles J. Hilkey, J. D.
Iowa City, Iowa	State University of Iowa College of Law	Dudley O. McGovney, LL. B.
Lawrence, Kans	University of Kansas Law School	
Topeka, Kans	Washburn College School of Law	Charles E. Carpenter, LL. B.
Lexington, Ky	University of Kentucky College of Law	William T. Lafferty, A. M.
Louisville, Ky	Jefferson School of Law	Judge Thomas R. Gordon.
Do	State University Central Law School (colored).	C. H. Parrish, LL. D.
Do	University of Louisville, Law Department	Edward W. Hines, LL. D.
Baton Rouge, La	Louisana State University, Law Department.	Robert L. Tullis, LL. B.
New Orleans, La	Loyola University Law School	C. Cage, LL. D.
Do	Tulane University of Louisana College of Law.	Charles Payne Fenner, LL. B.
Orono, Me	University of Maine College of Law	Robert J. Aley, LL. D.
Baltimore, Md	University of Maryland Law School	Henry D. Harlan, LL. D.
Boston, Mass	Boston University School of Law	Homer Albers, LL. B.
Do	Portia Law School	Arthur W. MacLean, J. M.
Do	Suffolk Law School	Gleason L. Archer, LL. B.
Do	Northeastern College School of Law	Everett Avery Churchill.
Cambridge, Mass	Harvard University Law School	Roscoe Pound, D. C. L., LL. D.
Ann Arbor, Mich	University of Michigan Law School	H. M. Bates, LL. B.
Detroit, Mich	Detroit College of Law (conducted by Detroit Young Men's Christian Association).	Benjamin D. Edwards, Ph. B., chancellor; William Krichbaum, LL. B.
Do	University of Detroit Law School	Judge George S. Hosmer.

XXII.—Presidents or Deans of Schools of Law—Continued.

Location.	Name of institution.	President or dean.
Minneapolis	University of Minnesota Law School	Everett Fraser, LL. B.
Do	Minnesota College of Law (Inc.)	George T. Simpson.
St. Paul, Minn	St. Paul College of Law	Judge Oscar Hallam.
University, Miss	University of Mississippi, Department of Law.	Leonard J. Farley, LL. D.
Columbia, Mo	University of Missouri School of Law	J. P. McBaine, LL. B.
Kansas City, Mo	Kansas City School of Law	Edward D. Ellison.
St. Louis, Mo	Benton College of Law	George L. Corlis, LL. B.
Do	City College of Law and Finance	Eustace C. Wheeler, LL. B.
Do	St. Louis University Institute of Law	Paul Bakewell, LL. D.
Do	Washington University, St. Louis Law School.	Tyrrell Williams, LL. B.
Missoula, Mont	State University of Montana College of Law.	C. W. Leaphart, LL. B.
Lincoln, Nebr	University of Nebraska College of Law	Warren A. Seavey, LL. B.
Omaha, Nebr	Creighton University, Creighton College of Law.	Louis J. TePoel, LL. B.
Do	University of Omaha, Omaha School of Law.	Judge Alexander C. Troup.
Newark, N. J	New Jersey Law School	Richard D. Currier, LL. B.
Albany, N. Y	Union University, Albany Law School	J. Newton Fiero, LL. D.
Brooklyn, N. Y	St. Lawrence University, Brooklyn Law School.	William P. Richardson, LL. D.
Buffalo, N. Y	University of Buffalo, Buffalo Law School	Carlos C. Alden, J. D.
Ithaca, N. Y	Cornell University College of Law	Edwin H. Woodruff, LL. B.
New York, N. Y	Columbia University School of Law	Harlan F. Stone, LL. B.
Do	Fordham University School of Law	Francis P. Garvan, LL. D.
Do	New York Law School	George Chase, LL. B.
Do	New York University Law School	Frank H. Sommer, LL. D.
Syracuse, N. Y	Syracuse University College of Law	Frank R. Walker, D. C. L.
Chapel Hill, N. C	University of North Carolina School of Law.	Lucius Polk McGehee, A. B.
Durham, N. C	Trinity College Law School	Samuel Fox Mordecail, LL. D.
Wake Forest, N. C	Wake Forest College Law School	Needham Y. Gulley, LL. D.
University, N. Dak	University of North Dakota School of Law	Hugh E. Willis, LL. M., acting dean.
Ada, Ohio	Ohio Northern University, College of Law	Hon. James Nye.
Cincinnati, Ohio	University of Cincinnati, College of Law	Alfred B. Benedict, LL. B.
Do	Young Men's Christian Association Night Law School.	Gilbert Bettman, LL. B.
Cleveland, Ohio	Baldwin-Wallace College, Cleveland Law School.	Willis Vickery, LL. D.
Do	Western Reserve University, Franklin T. Backus Law School.	Walter Thomas Dunmore, LL. B.
Columbus, Ohio	Ohio State University College of Law	John Jay Adams, LL.D.
Toledo, Ohio	St. John's University College of Law	Judge John P. Manton.
Do	Toledo University College of Law	Aaron B. Cohn, LL. B.
Norman, Okla	University of Oklahoma School of Law	Julien C. Monnet, LL. B.
Eugene, Oreg	Law School, University of Oregon	William G. Hale, SS. B.
Salem, Oreg	Willamette University College of Law	I. H. Van Winkle, LL. B.
Carlisle, Pa	Dickinson School of Law	William Trickett, LL. D.
Philadelphia, Pa	Temple University School of Law	Francis Chapman, LL. D.
Do	University of Pennsylvania Law School	William E. Mikell, B. S., LL. M.
Pittsburgh, Pa	Duquesne University School of Law	Judge Joseph M. Swearingen.
Do	University of Pittsburgh, Pittsburgh Law School.	John Douglas Shafer, LL. D.
Manila, P. I	University of the Philippines, College of Law.	Jorge Bocobo, LL. B.
Rio Piedras, Porto Rico	University of Porto Rico College of Law	C. W. St. John.
Columbia, S. C	University of South Carolina Law School	
Vermilion, S. Dak	University of South Dakota College of Law	Marshall McKusick, LL. B.
Chattanooga, Tenn	Chattanooga College of Law	Charles R. Evans, A. M.
Knoxville, Tenn	The University of Tennessee College of Law.	Malcolm McDermott, LL. B.
Lebanon, Tenn	Cumberland University Law School	Edward Ewing Beard, LL. B., acting dean.
Nashville, Tenn	Vanderbilt University Law School	John Bell Keeble, LL. B.
Austin, Tex	University of Texas School of Law	John Charles Townes, LL. D.
Salt Lake City, Utah	University of Utah School of Law	William H. Leary, J. D.
Charlottesville, Va	University of Virginia, Department of Law.	William Minor Lile, LL. D.
Lexington, Va	Washington and Lee University School of Law.	Joseph R. Long, LL. D.
Richmond, Va	Richmond College School of Law	F. W. Boatwright, LL. D.
Seattle, Wash	University of Washington Law School	John T. Condon, LL. M.
Spokane, Wash	Gonzaga University, Department of Law	Edward J. Cannon, LL. D.
Morgantown, W. Va	West Virginia University College of Law	Henry Craig Jones, LL. B.
Madison, Wis	University of Wisconsin Law School	Harry Sanger Richards, LL. D.
Milwaukee, Wis	Marquette University College of Law	Max Schoetz, A. B., LL. B.

XXIII.—Presidents or Deans of Schools of Medicine.

[(H) designates the medical school as Homeopathic and (E) as Eclectic.]

Location.	Name of institution.	President or dean.
Birmingham, Ala	University of Alabama, Graduate School of Medicine.	James S. McLester, M. D.
University, Ala	University of Alabama, Department of Medicine.	Clyde Brooks, M.D., Ph. D.
Little Rock, Ark	University of Arkansas, School of Medicine	Morgan Smith, M. D.
Loma Linda and Los Angeles, Calif.	College of Medical Evangelists	Newton G. Evans, M. D.
Los Angeles, Calif	Los Angeles Medical Department of the University of California.	George H. Kress, M. D.
San Francisco, Calif	Leland Stanford Junior University School of Medicine.	William Ophuls, M. D.
Do	University of California, Medical School[1]	Wallace I. Terry, M. D., acting dean.
Boulder and Denver, Colo.	University of Colorado, School of Medicine	Charles N. Meader, M. D.
New Haven, Conn	Yale University School of Medicine	Milton Charles Winternitz, M. D.
Washington, D. C	George Washington University, Medical School.	William C. Borden, M. D.
Do	Georgetown University, School of Medicine	George M. Kober, M. D.
Do	Howard University, Medical College (colored).	Edward A. Balloch, M. D.
Atlanta, Ga	Atlanta Medical College, School of Medicine, Emory University.	W. S. Elkin, M. D.
Augusta, Ga	Medical Department, University of Georgia	William H. Doughty, jr., M. D.
Chicago, Ill	Loyola University, School of Medicine	Charles Louis Mix, M. D.
Do	Chicago Medical School	Charles Hill, M. D.
Do	Hahnemann Medical College and Hospital (H).	Jos. P. Cobb, M. D.
Do	Northwestern University, Medical School	Arthur Isaac Kendall, M. D.
Do	Rush Medical College, University of Chicago.	John Milton Dodson, M. D.
Do	University of Illinois, College of Medicine	Albert C. Eycleshymer, M. D.
Bloomington and Indianapolis, Ind.	Indiana University School of Medicine	Charles P. Emerson, M. D.
Iowa City, Iowa	State University of Iowa, College of Medicine.[2]	Lee W. Dean, M. D.
Rosedale and Lawrence, Kans.	University of Kansas, School of Medicine	Merwin T. Sudler, M. D., associate dean.
Louisville, Ky	University of Louisville, Medical Department.	Henry Enos Tuley, M. D.
New Orleans, La	Tulane University of Louisiana, School of Medicine.	Isadore Dyer, M. D.
Brunswick and Portland, Me.	Bowdoin Medical School	Addison S. Thayer, M. D.
Baltimore, Md	Johns Hopkins University, Medical Department.	J. Whitridge Williams, M. D.
Do	University of Maryland, School of Medicine and College of Physicians and Surgeons.	J. M. H. Rowland, M. D.
Boston, Mass	Harvard University, Medical School	David Linn Edsall, M. D..
Do	Tufts College, Medical School	Charles F. Painter, M. D.
Do	Boston University, School of Medicine	John P. Sutherland, M. D.
Ann Arbor, Mich	University of Michigan, Medical School	Victor C. Vaughan, M. D., LL.D.
Do	University of Michigan, Homeopathic Medical School.	Wilbert B. Hinsdale, M. D.
Detroit, Mich	Detroit College of Medicine and Surgery[3]	W. H. MacCraken, M. D.
Minneapolis, Minn	University of Minnesota, Medical School	E. P. Lyon, M. D.
University, Miss	University of Mississippi, School of Medicine.	Waller S. Leathers, M. D.
Columbia, Mo	University of Missouri, School of Medicine	Guy L. Noyes, M. D.
St. Louis, Mo	St. Louis College of Physicians and Surgeons.	Waldo Briggs, M. D.
Do	St. Louis University, School of Medicine	Hanau W. Loeb, M. D.
Do	Washington University, Medical School	Nathaniel Allison, M. D.
Lincoln and Omaha, Nebr.	University of Nebraska, College of Medicine	Irving S. Cutter, M. D.
Omaha, Nebr	John A. Creighton Medical College	Herman von W. Schulte, M. D.
Hanover, N. H	Dartmouth Medical School	John M. Gile, M. D.
Albany, N. Y	Albany Medical College, Union University	Thomas Ordway, M. D.
Brooklyn, N. Y	Long Island College Hospital	Otto V. Huffman, M. D.
Buffalo, N. Y	University of Buffalo, Medical Department	C. Sumner Jones, M. D.
New York, N. Y	Columbia University of Physicians and Surgeons.	William Darrach, M. D.
New York and Ithaca, N. Y.	Cornell University, Medical College	Walter L. Niles, M. D.
New York, N. Y	University and Bellevue Hospital Medical College.	Samuel A. Brown, M. D.
Do	New York Homeopathic Medical College and Flower Hospital.	Rudolph F. Rabe, M. D.
Syracuse, N. Y	Syracuse University, College of Medicine	John L. Heffron, M. D.

[1] Includes electives in homeopathy in the curriculum of the medical school.

[2] Includes an elective chair in homeopathic materia medica and therapeutic:

[3] Became a part of education system of the city of Detroit, July 1, 1918.

XXIII.—PRESIDENTS OR DEANS OF SCHOOLS OF MEDICINE—Continued.

Location.	Name of institution.	President or dean.
Chapel Hill, N. C.	University of North Carolina, School of Medicine.	Issac H. Manning, M. D.
Wake Forest, N. C.	Wake Forest College, School of Medicine	Thurman D. Kitchin, M. D.
University, N. Dak.	University of North Dakota, School of Medicine.	Harley E. French, M. D.
Cincinnati, Ohio	University of Cincinnati, College of Medicine.	John C. Oliver, M. D., acting dean.
Do.	Eclectic Medical College	Rolla L. Thomas, M. D.
Cleveland, Ohio	Western Reserve University, School of Medicine.	Carl A. Hamann, M. D.
Columbus, Ohio	Ohio State University, College of Medicine	E. F. McCampbell, M. D.
Do.	Ohio State University, College of Homeopathic Medicine.	Claude A. Burrett, M. D.
Norman and Oklahoma City, Okla.	University of Oklahoma, School of Medicine.	Le Roy Long, M. D.
Portland, Oreg.	University of Oregon, Medical School	Richard B. Dillehunt, M. D.
Philadelphia, Pa.	Jefferson Medical College	Ross V. Patterson, M. D.
Do.	Medico-Chirurgical College and Hospital, Graduate School of Medicine of the University of Pennsylvania.	George H. Meeker, Ph. D., LL. D.
Do.	Temple University, School of Medicine	Frank C. Hammond, M. D.
Do.	Medical School of the University of Pennsylvania.	William Pepper, M. D.
Do.	Woman's Medical College of Pennsylvania	Martha Tracy, M. D.
Do.	Hahnemann Medical College and Hospital of Philadelphia (H.)	W. A. Pearson, M. D.
Pittsburgh, Pa.	University of Pittsburgh, School of Medicine.	Raleigh Russell Huggins, M. D.
Manila, P. I.	University of the Philippines, College of Medicine and Surgery.	Fernando Calderon, M. D.
Charleston, S. C.	Medical College of the State of South Carolina.	Robert Willson, jr., M. D.
Vermilion, S. Dak.	University of South Dakota, College of Medicine.	Christian P. Lommen, M. D.
Memphis, Tenn.	University of Tennessee, College of Medicine.	McIver Woody, M. D.
Nashville, Tenn.	Vanderbilt University, School of Medicine	L. E. Burch, M. D.
Do.	Meharry Medical College (colored)	G. W. Hubbard, M. D.
Dallas, Tex.	Baylor University, Medical Department	Edward H. Cary, M. D.
Galveston, Tex.	University of Texas, School of Medicine	William S. Carter, M. D.
Salt Lake City, Utah	University of Utah, School of Medicine	Perry G. Snow, B. A., M.D.
Burlington, Vt.	University of Vermont, College of Medicine	Henry C. Tinkham, M. D.
Charlottesville, Va.	University of Virginia, Medical Department.	Theodore Hough, Ph. D., dean of the faculty.
Richmond, Va.	Medical College of Virginia	E. C. L. Miller, M. D.
Morgantown, W. Va.	West Virginia University, School of Medicine.	John N. Simpson, M. D.
Madison, Wis.	University of Wisconsin, Medical School	Charles R. Bardeen, M. D.
Milwaukee, Wis.	Marquette University, School of Medicine	Louis F. Jermain, M. D.

XXIV.—PRESIDENTS OR DEANS OF SCHOOLS OF DENTISTRY.

Los Angeles, Calif.	University of Southern California, College of Dentistry.	Lewis E. Ford, D. D. S.
San Francisco, Calif.	College of Physicians and Surgeons, Department of Dentistry.	Charles Boxton, D. D. S.
Do.	University of California, College of Dentistry	Guy S. Millbery, D. D. S.
Denver, Colo.	Colorado College of Dental Surgery, University of Denver.	Manfred S. Fraser.
Washington, D. C.	Georgetown University, Dental Department.	Bruce Taylor, D. D. S.
Do.	Howard University Dental College (colored).	Edward A. Balloch, M. D.
Atlanta, Ga.	Atlanta-Southern Dental College	Thos. P. Hinman.
Chicago, Ill.	Chicago College of Dental Surgery, Valparaiso University.	Truman W. Brophy, LL. D.
Do.	Northwestern University, Dental School	Arthur D. Black, M. D., D. D. S.
Do.	University of Illinois, College of Dentistry	Frederick B. Moorehead, M. D.
Indianapolis, Ind.	Indiana Dental College, University of Indianapolis.	Frederic R. Henshaw.
Valparaiso, Ind.	Valparaiso University, College of Dentistry.	Truman W. Brophy.
Iowa City, Iowa	State University of Iowa, College of Dentistry	Frank T. Breene, M. D., D. D. S.
Louisville, Ky.	University of Louisville, College of Dentistry.	Henry B. Tileston, M. D., D. D. S
New Orleans, La.	Loyola School of Dentistry, Loyola University	C. V. Vignes, D. D. S.
Do.	Tulane University of Louisiana, School of Dentistry.	Wallace Wood, jr., D. D. S.
Baltimore, Md.	Baltimore College of Dental Surgery	W. G. Foster, D. D. S.
Do.	University of Maryland, Dental Department	Timothy O. Heatwole, M. D., D. D. S.

XXIV.—PRESIDENTS OR DEANS OF SCHOOLS OF DENTISTRY—Continued.

Location.	Name of institution.	President or dean.
Boston, Mass	Harvard University, Dental School	Eugene Hanes Smith, D. M. D.
Do	Tufts College, Dental School	William Rice, D. M. D.
Ann Arbor, Mich	University of Michigan, College of Dental Surgery.	Marcus L. Ward, D. D. Sc.
Minneapolis, Minn	University of Minnesota, College of Dentistry	Alfred Owre, D. M. D.
Kansas City, Mo	Kansas City-Western Dental College	Charles C. Allen, D. D. S.
St. Louis, Mo	St. Louis University, School of Dentistry	James P. Harper.
Do	Washington University, School of Dentistry.	John H. Kennerly.
Lincoln, Nebr	University of Nebraska, College of Dentistry.	Wallace C. Davis, M. D., D. D. S.
Omaha, Nebr	Creighton University, College of Dentistry	A. Hugh Hipple, D. D. S.
Jersey City, N. J	College of Jersey City, Department of Dentistry	Herbert S. Sutphen.
Buffalo, N. Y	University of Buffalo, College of Dentistry	Daniel H. Squire.
New York, N. Y	College of Dental and Oral Surgery of New York.	William Carr, M. D.
Do	Columbia University, Dental School	James C. Egbert, director.
Do	New York College of Dentistry	Alfred R. Starr.
Cincinnati, Ohio	Cincinnati College of Dental Surgery	G. S. Junkerman, M. D.
Do	Ohio College of Dental Surgery	Henry T. Smith, D. D. S.
Cleveland, Ohio	Western Reserve University, Dental School.	Frank M. Casto, M. D., D. D. S.
Columbus, Ohio	Ohio State University, College of Dentistry.	Harry M. Semans.
Portland, Oreg	North Pacific College of Dentistry	Herbert C. Miller.
Philadelphia, Pa	Temple University, School of Dentistry	I. Norman Broomell, D. D. S.
Do	Thomas W. Evans Museum and Dental Institute, School of Dentistry, University of Pennsylvania.	Charles R. Turner, M. D.
Pittsburgh, Pa	University of Pittsburgh, School of Dentistry	H. Edmund Friesell.
Memphis, Tenn	College of Dentistry, University of Tennessee	Joseph A. Gardner.
Nashville, Tenn	Vanderbilt University, Dental Department	Boyd Bogle.
Do	Meharry Dental College (colored)	G. W. Hubbard, M. D.
Dallas, Tex	College of Dentistry, Baylor University	J. S. Wright, D. D. S.
Houston, Tex	Texas Dental College	O. F. Gambati.
Richmond, Va	School of Dentistry, Medical College of Virginia.	J. A. C. Hoggan, D. D. S.
Milwaukee, Wis	Marquette University, Dental Department	Henry L. Banzhaf, D. D. S.

XXV.—PRESIDENTS OR DEANS OF SCHOOLS OF PHARMACY.

Auburn, Ala	Alabama Polytechnic Institute, Pharmacy Department.	L. S. Blake, M. S.
Los Angeles, Calif	University of Southern California, College of Pharmacy.	Laird J. Stabler, Sc. D.
San Francisco, Calif	California College of Pharmacy, University of California.	Franklin T. Green, Phm. G.
Boulder, Colo	University of Colorado, College of Pharmacy.	Homer C. Washburn, Ph.C.
Washington, D. C	George Washington University, National College of Pharmacy.	H. E. Kalusowski.
Do	Howard University, Pharmaceutic College (colored).	Edward A. Balloch, M. D.
Athens, Ga	University of Georgia, School of Pharmacy	Robert C. Wilson, head of department.
Atlanta, Ga	Atlanta College of Pharmacy	George F. Payne.
Do	Southern College of Pharmacy	R. C. Hood.
Chicago, Ill	Central States College of Pharmacy	George Louis Secord, Ph. G.
Do	University of Illinois, School of Pharmacy	William B. Day, Phar. G.
Indianapolis, Ind	Indianapolis College of Pharmacy	Fred A. Mueller.
Lafayette, Ind	School of Pharmacy, Purdue University	Charles B. Jordan, M. S., head of school.
Notre Dame, Ind	University of Notre Dame, School of Pharmacy.	Robert Lee Green.
Valparaiso, Ind	Valparaiso University, Department of Pharmacy.	E. H. Wisner, Phm. C.
Des Moines, Iowa	Highland Park College of Pharmacy and Chemistry.	Elbert O. Kagy, Ph. C., director.
Iowa City, Iowa	State University of Iowa, College of Pharmacy.	Wilber J. Teeters, Phar. C.
Lawrence, Kans	University of Kansas, School of Pharmacy	Lucius E. Sayre, M. S.
Louisville, Ky	Louisville College of Pharmacy	Oscar C. Dilly.
New Orleans, La	New Orleans College of Pharmacy (affiliated with Loyola University).	J. J. Grasser, M. D.
Do	Tulane University of Louisiana, School of Pharmacy.	Isadore Dyer, M. D.
Baltimore, Md	Department of Pharmacy, University of Maryland.	E. Frank Kelley, Phar. D.
Boston, Mass	Massachusetts College of Pharmacy	Theodore J. Bradley, Phar. G.

XXV.—Presidents or Deans of Schools of Pharmacy—Continued.

Location.	Name of institution.	President or dean.
Ann Arbor, Mich	University of Michigan, College of Pharmacy	Edward Henry Kraus, Ph. D., acting dean.
Big Rapids, Mich	Ferris Institute, Pharmacy Department	M. A. Jones, principal.
Minneapolis, Minn	University of Minnesota, College of Pharmacy.	Frederick J. Wulling, Phm. D.
University, Miss	University of Mississippi, School of Pharmacy.	Henry M. Faser.
Kansas City, Mo	Kansas City College of Pharmacy and Natural Sciences.	David V. Whitney.
St. Louis, Mo	St. Louis College of Pharmacy	Henry M. Whelpley, M. D., Phar. M.
Missoula, Mont	State University of Montana, School of Pharmacy.	Charles E. Mollet, Phm. C.
Lincoln, Nebr	University of Nebraska, College of Pharmacy	Rufus A. Lyman, M. D.
Omaha, Nebr	Creighton University, Department of Pharmacy.	Howard C. Newton, Phm. C.
Jersey City, N. J	College of Jersey City, Department of Pharmacy.	Joseph Koppel.
Newark, N. J	New Jersey College of Pharmacy	William O. Kuebler.
Albany, N. Y	Albany College of Pharmacy, Union University.	William Mansfield.
Brooklyn, N. Y	Brooklyn College of Pharmacy	William C. Anderson.
Buffalo, N. Y	Buffalo College of Pharmacy, University of Buffalo.	Willis G. Gregory.
New York, N. Y	College of Pharmacy of the City of New York, Columbia University.	Henry H. Rusby, M. D.
Do	Fordham University, College of Pharmacy	Jacob Diner.
Chapel Hill, N. C	University of North Carolina, School of Pharmacy.	Edward V. Howell, A. B.
Agricultural College, N. Dak.	North Dakota Agricultural College, School of Pharmacy.	E. F. Ladd, LL. D.
Ada, Ohio	Ohio Northern University, College of Pharmacy.	Rudolph H. Raabe, Phar. C.
Cincinnati, Ohio	Cincinnati College of Pharmacy	Walter R. Griess. M. D.
Cleveland, Ohio	Western Reserve University, Cleveland School of Pharmacy.	Edward Spease.
Columbus, Ohio	Ohio State University, College of Pharmacy.	Clair A. Dye, acting.
Toledo, Ohio	Toledo University, College of Pharmacy	William McKendre Reed.
Norman, Okla	State University of Oklahoma, School of Pharmacy.	David B. R. Johnson.
Corvallis, Oreg	Oregon Agricultural College, School of Pharmacy.	Adolph Zeifle, M. S.
Portland, Oreg	North Pacific College of Pharmacy	Herbert C. Miller.
Philadelphia, Pa	Philadelphia College of Pharmacy	Charles H. LaWall, Phar. M.
Do	Temple University, School of Pharmacy	John R. Minehart, M. D.
Pittsburgh, Pa	Pittsburgh College of Pharmacy, University of Pittsburgh.	Julius A. Koch.
Rio Piedras, P. R	University of Porto Rico, College of Pharmacy.	C. W. St. John.
Providence, R. I	Rhode Island College of Pharmacy and Allied Sciences.	Edwin E. Calder.
Charleston, S. C	Medical College of State of South Carolina, Department of Pharmacy.	Robert Wilson, jr.
Brookings, S. Dak	South Dakota State College of Agriculture and Mechanic Arts, School of Pharmacy.	Earl R. Serles, professor.
Memphis, Tenn	School of Pharmacy of the University of Tennessee.	McIver Woody, M. D.
Nashville, Tenn	Meharry College of Pharmacy (colored)	G. W. Hubbard, M. D.
Dallas, Tex	Baylor University, College of Pharmacy	Eugene G. Eberle.
Galveston, Tex	University of Texas, College of Pharmacy	William S. Carter.
Salt Lake City, Utah	University of Utah, Department of Pharmacy.	Le Roy Dey Swingle, Ph. D.
Richmond, Va	School of Pharmacy, Medical College of Virginia.	Wortley F. Rudd, Phar. G.
Pullman, Wash	State College of Washington, School of Pharmacy.	P. H. Dirstine, Phar. G., head.
Seattle, Wash	University of Washington, College of Pharmacy.	Charles W. Johnson, Ph. D.
Morgantown, W. Va	Department of Pharmacy, West Virginia University.	John N. Simpson.
Madison, Wis	University of Wisconsin course in pharmacy.	Edward Kremers, director.

XXVI.—PRESIDENTS OR DEANS OF SCHOOLS OF VETERINARY MEDICINE.

Location.	Name of institution.	President or dean.
Auburn, Ala	Alabama Polytechnic Institute, College of Veterinary Medicine.	C. A. Cary.
Fort Collins, Colo	Colorado Agricultural College, Division of Veterinary Medicine.	George H. Glover, head of division.
Washington, D. C	United States College of Veterinary Surgeons.	H. Stanley Gamble, D. V. S.
Chicago, Ill	Chicago Veterinary College	Joseph Hughes.
Do	McKillip Veterinary College	Charles Frazier.
Indianapolis, Ind	Indiana Veterinary College	George H. Roberts.
Terre Haute, Ind	Terre Haute Veterinary College	C. I. Fleming.
Ames, Iowa	Iowa State College, Division of Veterinary Medicine.	Charles H. Stange.
Manhattan, Kans	Kansas State Agricultural College, Veterinary Department.	Ralph R. Dykstra, D. V. M.
East Lansing, Mich	Michigan Agricultural College, Veterinary Division.	Frank W. Chamberlain, acting dean.
Grand Rapids, Mich	Grand Rapids Veterinary College	C. S. McGuire.
Columbia, Mo	University of Missouri, Department of Veterinary Science.	John Waldo Connaway, D. V. S., professor.
St. Joseph, Mo	St. Joseph Veterinary College	R. C. Moore.
Reno, Nev	University of Nevada, State Veterinary Control Service.	Edward Records, V. M. D., director.
Ithaca, N. Y	New York State Veterinary College at Cornell University.	Veranus A. Moore.
New York, N. Y	New York State Veterinary College at New York University.	W. Horace Hoskins.
Agricultural College, N. Dak.	North Dakota Agricultural College, School of Veterinary Medicine and Surgery.	A. F. Schalk.
Cincinnati, Ohio	Cincinnati Veterinary College	Louis P. Cook.
Columbus, Ohio	Ohio State University, College of Veterinary Medicine.	David S. White, D. V. M.
Corvallis, Oreg	Oregon Agricultural College, Department of Veterinary Medicine.	Bennett T. Simms, D. V. M., Chief in Veterinary Medicine.
Philadelphia, Pa	University of Pennsylvania, School of Veterinary Medicine.	Louis A. Klein.
Pullman, Wash	State College of Washington, College of Veterinary Science.	Earl E. Wegener, D. V. S., vice dean.

XXVII.—PRINCIPALS OF NORMAL AND KINDERGARTEN TRAINING SCHOOLS.

1. PUBLIC NORMAL SCHOOLS.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
ALABAMA.			
Carrollton	Pickens Co. Training School	Coed	A. R. Spencer.
Centerville	Bibb Co. Training School	Coed	H. D. Davidson.
Cottage Grove	Coosa Co. Training School	Coed	J. T. Trail.
Daphne	Baldwin Co. Training School	Coed	Ligon A. Wilson.
do	State Normal School	Coed	Hilary H. Holmes.
Enterprise	Coffee Co. Training School	Coed	E. H. Tindel.
Evergreen	Conecuh Co. Training School	Coed	J. F. Conner.
Florence	State Normal School	Coed	Henry J. Willingham.
Haynesville	Lowndes Co. Training School	Coed	A. G. Pugh, acting.
Jacksonville	do	Coed	C. W. Daugette.
Livingston	do	Coed	George W. Brock.
Montgomery	State Colored Normal School	Coed	J. W. Beverly.
Moundville	State Normal School	Coed	M. M. Mathews.
Normal [1]	State Agricultural and Mechanical Institute.	Coed	Walter I. Buchanan.
Plateau	Mobile Co. Training School	Coed	Isiah J. Whitley.
Troy	State Normal School	Coed	Edward M. Shackelford.
ARIZONA.			
Flagstaff	Northern Arizona Normal School	Coed	Lynn B. McMullen.
Tempe	Tempe Normal School of Arizona	Coed	Arthur J. Matthews.
ARKANSAS.			
Conway [1]	Arkansas State Normal School	Coed	Burr W. Torreyson.
Fordyce	Dallas Co. Training School	Coed	S. J. Anderson.
Marianna	Lee Co. Training School	Coed	D. W. Hughes.
Pine Bluff [1]	Branch Normal College (colored)	Coed	Jefferson G. Ish, jr.

[1] Teachers college authorized to confer degrees.

XXVII.—PRINCIPALS OF NORMAL AND KINDERGARTEN TRAINING SCHOOLS—Contd.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
CALIFORNIA.			
Arcata	Humboldt State Normal School	Coed	N. B. Van Matre.
Chico	State Normal School	Coed	C. M. Osenbaugh.
Fresno	do	Coed	C. L. McLane.
San Diego	do	Coed	Edward L. Hardy.
San Francisco	do	Coed	Frederic Burk.
San Jose	do	Coed	W. W. Kemp.
Santa Barbara	do	Coed	Clarence L. Phelps.
COLORADO.			
Gunnison [1]	Colorado State Normal School	Coed	Samuel Quigley.
CONNECTICUT.			
Bridgeport	City Normal School	Women	Le Roy Weller.
Danbury	State Normal School	Coed	John R. Perkins.
New Britain	do	Women	Marcus White.
New Haven	do	Women	Arthur B. Morrill.
Willimantic	State Normal Training School	Coed	George H. Shafer.
DISTRICT OF COLUMBIA.			
Washington	J. Ormond Wilson Normal School	Coed	Anne M. Goding.
Do	Myrtilla Miner School Normal (colored)	Coed	Lucy E. Moten.
FLORIDA.			
Delray	County Training School	Coed	Clarence C. Walker, sr.
GEORGIA.			
Athens	State Normal School	Coed	Jere M. Pound.
Atlanta	Atlanta Normal Training School	Coed	Mary W. Postell.
Forsyth	Normal and Industrial Training School.	Coed	W. M. Hubbard.
Milledgeville [1]	Georgia Normal and Industrial College.	Women	Marvin M. Parks.
Tifton	Tift Co. Industrial School	Coed	H. Rose McMillan.
Valdosta	Southern Georgia State Normal College.	Women	Richard H. Powell.
IDAHO.			
Albion	State Normal School	Coed	C. E. Bocock.
Lewiston	do	Coed	Oliver M. Elliott.
ILLINOIS.			
Carbondale [1]	Southern Illinois State Normal University.	Coed	Henry W. Shryock.
Charleston	Eastern Illinois State Normal School	Coed	Livingston C. Lord.
Chicago	Chicago Normal College	Coed	Wm. B. Owen.
De Kalb	Northern Illinois State Normal School.	Coed	Dr. J. Stanley Brown.
Macomb [1]	Western Illinois State Normal School.	Coed	Walter P. Morgan.
Normal [1]	Illinois State Normal University	Coed	David Felmley.
INDIANA.			
Fort Wayne	Fort Wayne Normal School	Coed	Flora Wilber.
Indianapolis	Normal Training School	Coed	Marion Lee Webster.
Muncie	Indiana State Normal School, Eastern Division.[2]	Coed	William W. Parsons.
Terre Haute [1]	Indiana State Normal School	Coed	William W. Parsons.
IOWA.			
Shenandoah	Western Normal College	Coed	Charles F. Garrett.
Sioux City	Normal School	Coed	Amelia H. Rhynsburger.
KANSAS.			
Emporia [1]	State Normal School	Coed	Thomas W. Butcher.
Hays [2]	Fort Hays Normal School	Coed	William A. Lewis.
Pittsburg [1]	State Manual Training Normal School.	Coed	W. A. Brandenburg.

[1] Teachers college authorized to confer degrees.
[2] This school is a division of the Indiana State Normal School, Terre Haute, Ind.

XXVII.—PRINCIPALS OF NORMAL AND KINDERGARTEN TRAINING SCHOOLS—Contd.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
KENTUCKY.			
Bowling Green	Western Kentucky State Normal School.	Coed	H. H. Cherry.
Frankfort	Kentucky Normal and Industrial Institute for Colored Persons.	Coed	Green P. Russell.
Louisville	Louisville Normal School	Women	Elizabeth Breckinridge.
Paris, Route 3	Bourbon Co. Training School	Coed	W. J. Callery.
Richmond	Eastern Kentucky State Normal School.	Coed	T. J. Coates.
LOUISIANA.			
Bastrop	Morehouse Training School	Coed	R. G. Steptoe.
Converse	Sabine Industrial Training School	Coed	W. B. Purvis.
Franklinton	Washington Parish Training School	Coed	B. P. Smith.
Grambling	Lincoln Parish Training School	Coed	Chas. P. Adams.
Natchitoches[1]	Louisiana State Normal College	Coed	Victor L. Roy.
New Orleans	New Orleans Normal School	Coed	Margaret C. Hanson.
MAINE.			
Castine	Eastern State Normal School	Coed	William D. Hall.
Farmington	State Normal School	Coed	Wilbert G. Mallett.
Fort Kent	Madawaska Training School	Coed	Mary P. Nowland.
Gorham	Gorham Normal School	Coed	Walter E. Russell.
Lewiston	Dingley Normal Training School	Women	Adelaide V. Finch.
Machias	Washington State Normal School	Coed	William L. Powers.
Presque Isle	Aroostook State Normal School	Coed	San Lorenzo Merriman.
MARYLAND.			
Baltimore	Baltimore Teachers Training School	Coed	Norman W. Cameron.
Do.	Colored Training School	Coed	Joseph H. Lockerman.
Bowie	Maryland State Normal and Industrial School (colored).	Coed	D. S. S. Goodloe.
Frostburg	State Normal School	Coed	James Widdowson.
Towson	do	Coed	Lida Lee Tall.
MASSACHUSETTS.			
Boston	Boston Normal School	Coed	Wallace C. Boyden.
Do.	Massachusetts Normal Art School	Coed	James F. Hopkins.
Bridgewater	State Normal School	Coed	Arthur C. Boyden.
Fitchburg	do	Coed	John G. Thompson.
Framingham	do	Coed	James Chalmers.
Hyannis	do	Coed	Wm. A. Baldwin.
Lowell	do	Coed	Clarence M. Weed, acting principal.
North Adams	do	Women	Frank F. Murdock.
Salem	do	Coed	Joseph Asbury Pitman.
Westfield	do	Women	Clarence A. Brodeur.
Worcester	do	Women	Wm. B. Aspinwall.
MICHIGAN.			
Allegan	Allegan County Training School	Coed	Stella Higgins.
Berrien Springs	Berrien Springs County Normal School	Coed	Jennie Burton.
Big Rapids	Mecosta County Normal School	Coed	Edith A. Collins.
Cadillac	Wexford County Normal School	Coed	Nora Owens.
Charlevoix	Charlevoix County Normal School	Coed	Lois Bowman.
Charlotte	Eaton County Normal School	Coed	Mrs. Ada Carrick.
Cheboygan	Cheboygan County Normal School	Coed	Frances Hewes.
Croswell	Sanilac County Normal School	Coed	May Bryce.
Detroit	Detroit Teachers College	Coed	S. A. Courtis, dean.
Dowagiac	Cass County Normal School	Coed	B. E. Disbrow.
East Tawas	Iosco County Training School	Coed	Gertrude Morehouse.
Evart	Osceola County Normal School	Coed	Pearl Bigge.
Flint	Genesee County Training School	Coed	Bess B. Penoyar.
Frankfort	Benzie County Training School	Coed	Beryl Haynes.
Gladwin	County Normal Training Class	Coed	G. E. Chadwick.
Hart	Oceana County Training School	Coed	Mrs. Emma R. Hutchins.
Hastings	Barry County Normal School	Coed	Mrs. Mabel Clark.
Ionia	Ionia County Normal School	Coed	Effie J. Caskey.
Kalamazoo	Western State Normal School	Coed	D. B. Waldo.
Kalkaska	Kalkaska County Normal School	Coed	Florence Pitcher.
Lake City	Missaukee County Normal School	Coed	Blanche H. Leland.

[1] Teachers' College authorized to confer degrees.

XXVII.—PRINCIPALS OF NORMAL AND KINDERGARTEN TRAINING SCHOOLS—Contd.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
MICHIGAN—continued.			
Lapeer	Lapeer County Normal School	Coed	Nina Beatig.
Ludington	Mason County Normal School	Coed	H. E. Waits.
Marquette	Northern State Normal School	Coed	James H. B. Kaye.
Marshall	Calhoun County Normal School	Coed	F. E. King.
Mason	County Normal School	Coed	Marion Blount.
Mt. Pleasant	Central Michigan Normal School	Coed	E. C. Warriner.
Muskegon	Muskegon County Training School	Coed	Margaret Battle.
Onaway	Presque Isle County Normal School	Coed	Ada Paine.
Ontonagon	Ontonagon County Normal School	Coed	Mary Black.
Owosso	Shiawassee County Normal School	Coed	Amanda Hebeler.
Petoskey	Emmet County Normal School	Coed	Maud Ball.
Saginaw, W. S	Saginaw County Normal School	Coed	
St. Johns	Clinton County Normal School	Coed	Martha MacArthur.
Stanton	Montcalm County Normal School	Coed	W. V. Horn.
Traverse City	Grand Traverse County Normal School	Coed	Anna L. Evans
West Branch	Ogemaw County Normal School	Coed	Lillian M. Greer.
Ypsilanti [1]	Michigan State Normal College	Coed	Chas. McKenny.
MINNESOTA.			
Bemidji	State Normal School	Coed	M. W. Deputy.
Duluth	do	Coed	Eugene W. Bohannon.
Mankato	do	Coed	Chas. H. Cooper.
Moorhead	do	Coed	Oliver M. Dickerson.
St. Cloud	do	Coed	Joseph C. Brown.
Winona	do	Coed	Guy E. Maxwell.
MISSISSIPPI.			
Hattiesburg	Mississippi Normal College	Coed	Joe Cook.
Mt. Olive	Covington County Training School	Coed	J. E. Clark.
Purvis	Lamar County Training School	Coed	J. J. Jefferson.
Tupelo	Lee County Training School	Coed	A. M. Strange.
MISSOURI.			
Cape Girardeau [1]	Southeast Missouri State Teachers College.	Coed	W. S. Dearmont.
Jefferson City	Lincoln Institute (colored)	Coed	Clement Richardson.
Kirksville [1]	State Teachers College	Coed	John R. Kirk.
Maryville [1]	Northwest Missouri State Teachers College.	Coed	Ira Richardson.
St. Louis	Harris Teachers College	Coed	E. George Payne.
Springfield [1]	Southwest Missouri State Teachers College.	Coed	Clyde M. Hill.
Warrensburg [1]	Central Missouri State Teachers College.	Coed	Eldo L. Hendricks.
MONTANA.			
Dillon [1]	Montana State Normal School	Coed	Sheldon E. Davis.
NEBRASKA.			
Chadron [1]	State Normal School	Coed	Robert I. Elliott.
Kearney [1]	do	Coed	George E. Martin.
Peru [1]	do	Coed	E. L. Rouse.
Wayne [1]	do	Coed	U. S. Conn.
NEW HAMPSHIRE.			
Keene	State Normal School	Coed	Wallace E. Mason.
Plymouth	do	Coed	Ernest L. Silver.
NEW JERSEY.			
Jersey City	Teachers Training School	Coed	Joseph H. Bransinger.
Montclair	State Normal School	Coed	Chas. S. Chapin.
Newark	do	Coed	W. S. Willis.
Paterson	City Normal School	Coed	Frank W. Smith.
Trenton	New Jersey State Normal School	Coed	Jerohn J. Savitz.
NEW MEXICO.			
El Rito	Spanish-American Normal School	Coed	Roscoe R. Hill.
East Las Vegas [1]	New Mexico Normal University	Coed	Frank H. H. Roberts.
Silver City	New Mexico State Normal School	Coed	W. O. Hall.

[1] Teachers college authorized to confer degrees.

XXVII.—PRINCIPALS OF NORMAL AND KINDERGARTEN TRAINING SCHOOLS—Contd.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
NEW YORK.			
Brockport	State Normal School	Coed	Alfred C. Thompson.
Brooklyn	Maxwell Training School for Teachers.	Coed	Emma L. Johnston.
Buffalo	Teachers Training School.	Coed	H. W. Rockwell.
Cohoes	Cohoes Training School.	Coed	Harriet L. Knapp.
Cortland	State Normal School	Coed	Harry De W. De Groat.
Fredonia	do	Coed	Myron T. Dana.
Geneseo	do	Coed	James V. Sturges.
Jamaica	Jamaica Training School for Teachers	Coed	Archibald C. McLachlan.
New Paltz	State Normal School	Coed	John C. Bliss.
New York	New York Training School for Teachers.	Coed	Hugo Newman.
Oneonta	State Normal School	Coed	Percy I. Bugbee.
Oswego	do	Coed	James G. Riggs.
Plattsburg	do	Coed	Geo. K. Hawkins.
Potsdam	State Normal and Training School	Coed	Randolph T. Congdon.
Rochester	City Normal School	Coed	Edward J. Bonner.
Schenectady	Teachers Training School	Coed	Granville B. Jeffers.
Syracuse	Syracuse Training School for Teachers.	Women	J. Edward Banta.
Watertown	Watertown Training School for Teachers	Coed	Ella Maria Walradt.
Yonkers	Yonkers Training School for Teachers.	Coed	Eleanor M. Taylor.
NORTH CAROLINA.			
Bayboro	Pamlico County Training School	Coed	T. T. Ringer.
Boone	Appalachian Training School	Coed	B. B. Daugherty.
Chapel Hill	Orange County Training School	Coed	B. L. Bozeman.
Clinton	Sampson County Training School	Coed	Z. H. Hyman.
Cullowhee	Cullowhee Normal and Industrial School.	Coed	Robert L. Madison.
Elizabeth City	State Colored Normal School	Coed	P. W. Moore.
Fayetteville	do	Coed	E. E. Smith.
Garysburg	Northampton County Training School.	Coed	W. E. Knight.
Greensboro [1]	North Carolina College for Women	Women	Julius I. Foust.
Greenville	East Carolina Teachers' Training School.	Coed	Robt. H. Wright.
Grimesland	Pitt County Training School	Coed	G. R. Whitfield.
Method	Berry O'Kelly County Training School	Coed	John H. Bias.
Parmele	Parmele Training School	Coed	W. C. Chance.
Pembroke	Indian Normal School of Robeson County.	Coed	T. C. Henderson.
Powellsville	Bertie County Training School	Coed	C. G. White.
Print	County Training School	Coed	Virgil N. Bond.
Rocky Point	Pender County Training School	Coed	David B. Mdodana.
Scranton	Training School	Coed	R. A. Morisey.
Shelby	Cleveland County Training School	Coed	A. W. Foster.
Smithfield	Johnston County Training School	Coed	Wm. M. Cooper.
Southport	Brunswick County Training School	Coed	J. H. Floyd.
Sunbury	Gates County Training School	Coed	T. S. Cooper.
Wadesboro	Anson County Training School	Coed	J. R. Faison.
Whiteville	Columbus County Training School	Coed	Hugh V. Brown.
Winston-Salem	Slater Industrial and State Normal School (colored).	Coed	S. G. Atkins.
NORTH DAKOTA.			
Bottineau	Forestry State Normal School	Coed	Vernon L. Mangun.
Dickinson	State Normal School	Coed	Samuel T. May.
Ellendale	State Normal and Industrial School	Coed	Ryland M. Black.
Mayville	State Normal School	Coed	J. O. Evjen.
Minot	do	Coed	Wm. F. Clarke, acting.
Valley City	do	Coed	C. E. Allen.
OHIO.			
Akron	Perkins Normal School	Coed	W. J. Bankes.
Athens [1]	State Normal College of Ohio University.	Coed	John J. Richeson.
Bowling Green [1]	State Normal College	Coed	Homer B. Williams.
Cleveland	Cleveland School of Education	Coed	Ambrose L. Suhrie.
Columbus	Columbus Normal School	Women	Margaret W. Sutherland.
Dayton	Dayton Normal School	Women	Grace A. Greene.
Kent [1]	State Normal College	Coed	John E. McGilvrey.
Oxford [1]	Teachers College of Miami University	Coed	Harvey C. Minnich.
Toledo	Teachers Training School	Women	Elbert E. Day.

[1] Teachers college authorized to confer degrees.

XXVII.—Principals of Normal and Kindergarten Training Schools—Contd.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
OKLAHOMA.			
Ada	East Central State Teachers College	Coed	A. Linscheid.
Alva	Northwestern State Normal School	Coed	James P. Battenberg.
Durant	Southeastern State Normal School	Coed	H. G. Bennett.
Edmond	Central State Normal School	Coed	John G. Mitchell.
Langston	Colored Agricultural and Normal University.	Coed	John M. Marquess.
Tahlequah	Northeastern State Normal School	Coed	W. T. Ford.
Weatherford	Southwestern State Normal School (College for Teachers.)	Coed	James B. Eskridge.
OREGON.			
Monmouth	State Normal School	Coed	John H. Ackerman.
PENNSYLVANIA.			
Bloomsburg	State Normal School	Coed	C. H. Fisher.
California	Southwestern State Normal School	Coed	John A. Entz.
Clarion	State Normal School	Coed	Clyde C. Green.
East Stroudsburg	do	Coed	Frank E. Baker.
Edinboro	do	Coed	Arthur G. Crane.
Erie	Erie Normal Training School	Coed	Celestia J. Hershey.
Indiana	State Normal School	Coed	John A. H. Keith.
Kutztown	Keystone State Normal School	Coed	A. C. Rothermel.
Lock Haven	Central State Normal School	Coed	Charles Lose.
Mansfield	State Normal School	Coed	Wm. R. Straughn.
Millersville	do	Coed	C. H. Gordinier.
Philadelphia	Philadelphia Normal School	Coed	J. Eugene Baker.
Shippensburg	Cumberland Valley State Normal School.	Coed	Ezra Lehman.
Slippery Rock	State Normal School	Coed	J. Linwood Eisenberg.
West Chester	do	Coed	Andrew Thomas Smith.
RHODE ISLAND.			
Providence	Rhode Island College of Education	Coed	John L. Alger.
SOUTH CAROLINA.			
Orangeburg[1]	State Agricultural and Mechanical College (colored).	Coed	Robert S. Wilkinson.
Rockhill[1]	Winthrop Normal and Industrial College.	Women	David B. Johnson.
Summerville	Dorchester County Training School (colored).	Coed	Grace M. Ashe.
SOUTH DAKOTA.			
Aberdeen	Northern Normal and Industrial School	Coed	Harold W. Foght.
Madison	State Normal School	Coed	E. C. Higbie.
Spearfish	do	Coed	Ethelbert C. Woodburn.
Springfield	do	Coed	C. G. Lawrence.
TENNESSEE.			
Brownsville	Haywood County Training School	Coed	F. E. Jeffries.
Cookeville	Tennessee Polytechnic Institute	Coed	Q. M. Smith.
Denmark	Madison County Training School	Coed	H. L. L. Moss.
Johnson City	East Tennessee State Normal School	Coed	Sidney G. Gilbreath.
Lebanon	Wilson County Training School	Coed	L. L. Campbell.
Lucy	Woodstock Training, Industrial, and Agricultural School.	Coed	T. J. Johnson.
Murfreesboro	Middle Tennessee State Normal School.	Coed	P. A. Lyon, acting president.
Nashville	State Agricultural and Industrial Normal School for Negroes.	Coed	William J. Hale.
Normal	West Tennessee State Normal School.	Coed	Andrew A. Kincannon.
Somerville	Fayette County Industrial and Agricultural School.	Coed	U. P. Ware.
TEXAS.			
Alpine	Sue Ross Normal School	Coed	R. L. Marquis.
Canyon	West Texas State Normal College	Coed	J. A. Hill.
Commerce[1]	East Texas Normal College	Coed	R. B. Binnion.
Denton	North Texas State Normal College	Coed	W. H. Bruce.
Hallettsville	Colored Industrial and Training School.	Coed	P. S. Stevens.
Huntsville	Sam Houston State Normal Institute	Coed	Harry F. Estill.
Prairie View[1]	Prairie View State Normal and Industrial College (colored).	Coed	J. G. Osborne.
San Marcos	Southwest Texas State Normal College.	Coed	C. E. Evans.
VERMONT.			
Castleton	State Normal School	Coed	

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[1] Teachers college authorized to confer degrees.

XXVII.—PRINCIPALS OF NORMAL AND KINDERGARTEN TRAINING SCHOOLS—Contd.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
VIRGINIA.			
Bowling Green	Caroline County Training School	Coed	A. M. Walker.
East Radford [1]	State Normal School for Women	Women	John P. McConnell.
Farmville [1]	do	Women	Joseph L. Jarman.
Fredericksburg [1]	do	Women	A. B. Chandler, jr.
Harrisonburg [1]	do	Women	Samuel P. Duke.
North Emporia	Greenville County Training School	Coed	J. H. Wallen.
Petersburg	Virginia Normal and Industrial Institute (colored).	Coed	John M. Gandy.
Ruthville	Charles City County Training School	Coed	D. Wells Jones, acting.
Syringa	Middlesex County Training School	Coed	J. Henry St. Clare Walker.
Williamsburg	William and Mary Training School	Coed	J. A. C. Chandler.
Yorktown	York County Training School	Coed	Chas. E. Brown.
WASHINGTON.			
Bellingham	State Normal School	Coed	George W. Nash.
Centralia	Washington State Normal School	Coed	Alexander C. Roberts.
Charlotte	Albemarle Training School	Coed	J. G. Shelton.
Cheney	State Normal School	Coed	Noah D. Showalter
Ellensburg	do	Coed	George H. Black
WEST VIRGINIA.			
Athens	Concord State Normal School	Coed	C. C. Rossey.
Fairmont	State Normal School	Coed	Joseph Rosier.
Glenville	do	Coed	E. G. Rohrbough.
Huntingdon	Marshall College State Normal School	Coed	Frederic R. Hamilton.
Institute [1]	West Virginia Collegiate Institute (colored).	Coed	John W. Davis.
Shepherdstown	Shepherd College, State Normal School	Coed	Thomas C. Miller.
West Liberty	State Normal School	Coed	Howard J. McGinness.
WISCONSIN.			
Algoma	Door-Kewaunee County Training School.	Coed	Walter E. Larson.
Alma	Buffalo County Training School	Coed	Rose K. Brandt.
Antigo	Langlade County Normal School	Coed	J. H. Lasher.
Ashland	Ashland County Training School	Women	J. M. Lorscheter.
Berlin	Green Lake County Training School	Coed	C. D. Lamberton.
Columbus	Columbia County Training School	Coed	M. C. Palmer.
Eau Claire	Eau Claire County Training School	Coed	F. E. Jaastad.
Do	State Normal School	Coed	Harvey A. Schofield
Gays Mills	Crawford County Training School	Coed	B. W. Weenink.
Grand Rapids	Wood County Training School	Coed	M. H. Jackson.
Janesville	Rock County Training School	Coed	Frank J. Lowth.
Kaukauna	Outagamie County Training School	Coed	W. P. Hagman.
La Crosse	State Normal School	Coed	Fassett A. Cotton.
Ladysmith	Rusk County Training School	Coed	B. Mack Dresden.
Manitowoc	Manitowoc County Training School	Coed	Fred Christiansen.
Marinette	Stephenson Training School	Coed	W. E. Morton.
Medford	Tyor County Training School	Coed	J. H. Wheelock.
Menominie	Dunn County Training School	Coed	G. L. Bowman.
Menomonie [1]	Stout Institute	Coed	L. D. Harvey.
Merrill	Lincoln County Training School	Coed	E. W. McCrary.
Milwaukee	State Normal School	Coed	Carroll G. Pearse.
Monroe	Green County Training School	Coed	C. H. Dietz.
New Lisbon	Juneau County Teachers Training School.	Coed	C. W. McNown.
New London	Waupaca County Training School	Coed	Ellis N. Calef.
Oshkosh	State Normal School	Coed	H. A. Brown.
Phillips	Price County Training School	Coed	William Milne.
Platteville	State Normal School	Coed	Asa M. Royce.
Reedsburg	Sauk County Teachers Training School	Coed	H. S. Hemenway.
Rhinelander	Oneida County Training School	Coed	M. V. Boyce.
Rice Lake	Barron County Training School	Coed	G. E. Pratt.
Richland Center	Richland County Normal School	Coed	L. C. Johnson.
River Falls	State Normal School	Coed	Jesse H. Ames.
St. Croix Falls	Polk County Training School	Coed	C. L. Hill.
Stevens Point	State Normal School	Coed	John F. Sims.
Superior	do	Coed	V. E. McCaskill.
Union Grove	Racine-Kenosho Jt. County Training School for Teachers.	Coed	A. J. Smith.
Viroqua	Vernon County Normal Training School.	Coed	A. W. Zellmer.
Wausau	Marathon County Training School	Coed	D. A. Swartz.
Wautoma	Waushara County Training School	Coed	E. J. Fitzpatrick.
Whitewater	State Normal School	Coed	F. S. Hyer.

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[1] Teachers college authorized to confer degrees.

XXVII.—Principals of Normal and Kindergarten Training Schools—Contd.

2. PRIVATE NORMAL SCHOOLS.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
Tuskegee, Ala	Tuskegee Normal and Industrial Institute (colored).	Coed	Robert R. Moton.
Mt. Ida, Ark	Mt. Ida Academy	Coed	Roy Wright.
Denver, Colo	Denver Normal and Preparatory School.	Coed	M. F. Miller.
New Haven, Conn	New Haven Normal School of Gymnastics.	Coed	Ernest H. Arnold.
Chicago, Ill	American College of Physical Education.	Coed	Morey A. Wood.
Do	Central Y. M. C. A. Schools	Men and boys.	H. C. Daines.
Do	Chicago Normal School of Physical Education.	Women	Mina McEachern.
Do	Columbia Normal School of Physical Education.	Women	Mary A. Blood.
Oak Park, Ill	Concordia Teachers College	Men	W. C. Kohn.
Angola, Ind	Tri-State College	Coed	Littleton M. Sniff.
Danville, Ind	Central Normal College	Coed	Jonathan Rigdon.
Indianapolis, Ind	Normal College of the American Gymnastic Union.	Coed	Emil Rath.
Do	Teachers College of Indianapolis	Women	Mrs. Eliza A. Blaker.
Marion, Ind	Marion College	Coed	H. C. Bedford.
Lexington, Ky	Chandler Normal School (colored)	Coed	Frederick J. Werking.
Louisa, Ky	Kentucky Normal College	Coed	Walter M. Byington.
Ammendale, Md	Ammendale Normal Institute	Men	Brother Philip.
Boston, Mass	Boston School of Physical Education	Women	Marguerite Sanderson.
Do	Posse Normal School of Gymnastics	Coed	Hartvig Nissen.
Do	Sloyd Training School	Coed	Josef Sandberg.
Cambridge, Mass	Sargent School for Physical Education	Women	Dr. Dudley A. Sargent.
Battle Creek, Mich	Normal School of Physical Education	Women	Linda M. Roth.
Detroit, Mich	Thomas Normal Training School	Coed	Jennie L. Thomas.
Madison, Minn	Lutheran Normal School	Coed	A. K. Feroe.
New Ulm, Minn	Dr. Martin Luther College	Coed	E. R. Bliefernicht.
Fremont, Nebr	Fremont College	Coed	W. H. Clemmons.
Santee, Nebr	Santee Normal Training School (Indian).	Coed	Frederick B. Riggs.
Seward, Nebr	The Lutheran Seminary	Coed	F. W. C. Jesse.
Newark, N. J	Newark Normal School for Physical Education and Hygiene.	Coed	Henry Panzer.
New York, N. Y	Chalif Normal School of Dancing	Coed	Louis H. Chalif.
Do	Savage School for Physical Education	Coed	Watson L. Savage.
Raleigh, N. C	St. Augustine's School (colored)	Coed	Edgar H. Goold.
Maria Stein, Ohio	Normal School of the Precious Blood	Women	Sister M. Angeline.
New Lexington, Ohio	St. Aloysius Normal Training School	Women	Mother M. Leonie.
Woodville, Ohio	Woodville Academy and Normal School.	Coed	C. Vogel.
Mount Angel, Oreg	Mount Angel Academy and Normal School.	Women	Sister Mary Rose.
Oswego, Oreg	Marylhurst Normal School	Women	Sister M. Flavia.
Cheyney, Pa	Cheyney Training School for Teachers (colored).	Coed	Leslie P. Hill.
Ebensburg, Pa	Normal Institute	Coed	C. M. Graham.
Philadelphia, Pa	Gratz College (Hebrew Normal)	Coed	Henry M. Speaker.
Charleston, S. C	Avery Normal Institute (colored)	Coed	B. F. Cox.
Do	Wallingford Academy	Coed	C. H. Uggams.
Sioux Falls, S. Dak	Augustana College and Lutheran Normal School.	Coed	C. O. Solberg.
Martin, Tenn	Hall-Moody Normal School	Coed	James T. Warren.
Memphis, Tenn	Le Moyne Normal Institute (colored)	Coed	Edgar Clippinger.
Morristown, Tenn	Morristown Normal and Industrial College (colored).	Coed	Judson S. Hill.
Cambria, Va	Christiansburg Industrial Institute	Coed	E. A. Long.
Hampton, Va	Hampton Normal and Agricultural Institute (colored).	Coed	James E. Gregg.
Lawrenceville, Va	St. Paul Normal and Industrial School.	Coed	James S. Russell.
Manassas, Va	Manassas Industrial School	Coed	Edward D. Howe.
Seattle, Wash	Holy Names Academy and Normal School.	Women	Sister Louis of Gonzaga.
Spokane, Wash	Holy Names Normal School	Women	Sister M. Rosalind of the Sacred Heart.
Harpers Ferry, W. Va	Storer College (colored)	Coed	Henry T. McDnald.
Milwaukee, Wis	National Teachers Seminary	Coed	Max Griebsch.
St. Francis, Wis	Catholic Normal School	Men	Joseph Pierron.

XXVII.—Principals of Normal and Kindergarten Training Schools—Contd.

2. DIRECTORS OF KINDERGARTEN TRAINING IN COLLEGES, NORMAL SCHOOLS, AND IN KINDERGARTEN TRAINING SCHOOLS.

Location.	Name of institution.	Director of kindergarten training.
ALABAMA.		
Tuskegee	Tuskegee Normal and Industrial Institute (colored).	Mrs. G. K. Logan.
ARIZONA.		
Tempe	Tempe Normal School of Arizona	Amanda Zeller.
CALIFORNIA.		
Berkeley	Barnard Kindergarten Training School	Grace Everett Barnard.
Chico	State Normal School	Marion Barbour.
Fresno	do	
Los Angeles	do	Mrs. Ethel B. Waring.
Do	Miss Fulmer's School	Grace Fulmer.
Pasadena	Broadoaks Kindergarten Training School	Ada Mae Brooks.
San Francisco	State Normal School	Anna Stovall.
San Jose	do	Isabel O. MacKenzie.
COLORADO.		
Greeley	State Normal College	Genevieve Lyford
Gunnison	Colorado State Normal School	Stella H. Yowell.
CONNECTICUT.		
Bridgeport	Bridgeport City Normal School	Eileen Stowell.
Do	The Fannie A. Smith Kindergarten Training School.	Fannie A. Smith.
Danbury	State Normal School	Marguerite E. Wheeler.
Hartford	Culver-Smith Kindergarten Training School.	(M. Lima Culver and Louise Smith.)
New Britain	State Normal School	May Heath Noyes.
Willimantic	do	Fannie Bishop.
DISTRICT OF COLUMBIA.		
Washington	Columbia Kindergarten Training School	Sarah K. Lippincott.
Do	Howard University (colored)	Martha MacLear.
Do	J. Ormond Wilson Normal School	Jane M. McKnew.
Do	Myrtilla Miner Normal School (colored)	Irma A. Craig.
FLORIDA.		
Miami	Miami Kindergarten Normal School	Kate Colyer.
Tallahassee	State College for Women	Mabel H. Wheeler.
GEORGIA.		
Atlanta	Atlanta University (colored)	Gertrude H. Ware.
Columbus	Free Kindergarten Association Training School.	Edwina Wood.
Lagrange	Lagrange Settlement Training School	Maria Monroe.
Savannah	Kate Baldwin Free Kindergarten Association Training School.	Hortense M. Orcutt.
Valdosta	Southern Georgia State Normal College	Georgia Mae Barrett.
HAWAII.		
Honolulu	Honolulu Free Kindergarten Training School.	Frances Lawrence.
ILLINOIS.		
Chicago	School of Elementary and Home Education.	Mrs. Mary Boomer Page.
Do	School of Education, Chicago University	Alice Temple.
Do	National Kindergarten and Elementary College.	Elizabeth Harrison.
Do	Pestalozzi-Froebel Teacher's College	Mrs. B. H. Hegner.
Normal	Illinois State Normal University	Marguerite E. Lee.
INDIANA.		
Indianapolis	Teachers College of Indianapolis	Mrs. Eliza A. Blaker.
Muncie	Indiana State Normal School, Eastern Division.	B. F. Moore.
IOWA.		
Cedar Falls	Drake University	Irene Hirsch.
Des Moines	Iowa State Teachers College	Helen James.

XXVII.—PRINCIPALS OF NORMAL AND KINDERGARTEN TRAINING SCHOOLS—Contd.

3. DIRECTORS OF KINDERGARTEN TRAINING IN COLLEGES, NORMAL SCHOOLS, AND IN KINDERGARTEN TRAINING SCHOOLS—Continued.

Location.	Name of institution.	Director of kindergarten training.
KANSAS.		
Emporia	State Normal School	Achsa N. Harris.
Hays	Fort Hays Kansas Normal School	Luella McGee.
KENTUCKY.		
Louisville	Louisville Normal School	Mrs. R. D. Allen.
LOUISIANA.		
New Orleans	New Orleans Normal School	Frances Randolph.
MARYLAND.		
Baltimore	Affordby Kindergarten-Primary Normal School.	Elizabeth Harrison.
Do	Goucher College	Stella A. McCarty.
Do	Baltimore Teachers' Training School	Winifred Weldin.
MASSACHUSETTS.		
Boston	Boston Normal School	Mary C. Shute.
Do	Miss Niel's Kindergarten-Primary Training School.	Harriet Niel.
Do	Perry Kindergarten Normal School	Mrs. Harriet H. Jones.
Do	Miss Wheelock's Kindergarten Training School.	Lucy Wheelock.
Bridgewater	State Normal School	Annie M. Wells.
Cambridge	Lesley Normal School	Mrs. Edith L. Wolfard.
North Adams	State Normal School	Mrs. Eliza G. Graves.
Salem	do	E. Vera Knight.
Springfield	Springfield Kindergarten Training School	Hattie Twichell.
Westfield	State Normal School	Emma L. Hammond.
Worcester	do	Sarah A. Marble.
MICHIGAN.		
Alma	Alma College	Marguerite Conyne.
Kalamazoo	Western Normal School	Frances Kern.
Marquette	Northern State Normal School	H. Susan Bates.
Mount Pleasant	Central State Normal School	Helen R. Emmons.
Ypsilanti	Michigan State Normal College	D. H. Roberts.
MINNESOTA.		
Duluth	State Normal School	Helen C. Steele.
Mankato	do	Martha V. Collins.
Minneapolis	Minneapolis Kindergarten Association Normal School.	Stella Louise Wood.
Moorhead	State Normal School	Mrs. R. H. Durbaron.
St. Cloud	do	Beulah Douglass.
Winona	do	Louise Sutherland.
MISSISSIPPI.		
Columbus	Mississippi State College for Women	Rosa B. Knox.
Hattiesburg	Mississippi Normal College	Lottie Hooper.
MISSOURI.		
Cape Girardeau	Southeast Missouri State Teachers' College	Mrs. Elma Williams Ealy.
Springfield	Southwest Missouri State Teachers' College	Elizabeth Moss.
St. Louis	Wilson Kindergarten-Primary Institute	Mabel A. Wilson.
Warrensburg	Central Missouri State Teachers' College	Julia Scott.
MONTANA.		
Dillon	State Normal School	Jane Roberts.
NEBRASKA.		
Fremont	Midland College	Eva E. Mixer.
Kearney	State Normal School	Agnes Knutsen.
Lincoln	University of Nebraska	Clara O. Wilson.
Omaha	University of Omaha	Mary B. Fox.
Peru	State Normal School	Louise E. Hosmer.
University Place	Nebraska Wesleyan University	Mrs. Ella F. Miller.
Wayne	State Normal School	Alwine Luers.
NEW HAMPSHIRE.		
Keene	State Normal School	Pauline Mitchell.

XXVII.—PRINCIPALS OF NORMAL AND KINDERGARTEN TRAINING SCHOOLS—Contd.

3. DIRECTORS OF KINDERGARTEN TRAINING IN COLLEGES, NORMAL SCHOOLS, AND IN KINDERGARTEN TRAINING SCHOOLS—Continued.

Location.	Name of institution.	Director of kindergarten training.
NEW JERSEY.		
Montclair	State Normal School	Nora Atwood.
Newark	do	Harriet P. Carpenter.
Paterson	Normal Training School	Marguerite Houston.
Trenton	State Normal School	Edna V. Hughes.
East Orange	Miss Peet's Kindergarten Training School	Cora Webb Peet.
NEW YORK.		
Buffalo	Teachers' Training School	Ella C. Elder.
Do	State Normal School	Louise M. Cassety.
Cortland	State Normal and Training School	Bertha L. Hill.
Geneseo	State Normal School	Anne S. Blake.
Herkimer	Folts Mission Institute	Amy Quakenbush.
New York (Brooklyn)	Department of Education, Adelphi College	Anna E. Harvey.
Do	Training School for Teachers	Ruth E. Tappan.
New York	Harriet M. Mills Kindergarten Training School.	Harriet M. Mills.
Do	Ethical Culture School	Jessica E. Beers.
Do	Hunter College of the City of New York	Marie Bell Coles.
Do	Jenny Hunter Kindergarten Training School	Jenny Hunter.
Do	New York Training School for Teachers	M. Blanche Bosworth.
Do	Teachers' College, Columbia University	Patty S. Hill.
Do	Training School of the Froebel League	Mrs. Marion B. B. Langzettel.
Oneonta	State Normal School	Jessie Scott Himes.
Oswego	do	Elizabeth G. Holmes.
Rochester	City Normal School	Mary Jean Miller.
Schenectady	Teachers' Training School	Lillian Goetz.
Syracuse	Training School for Teachers	Maude C. Stewart.
NORTH CAROLINA.		
Raleigh	St. Augustine's School (colored)	Martha Hyde.
NORTH DAKOTA.		
Bottineau	Forestry State Normal School	Catherine M. Hart.
Valley City	State Normal School	Emma Flinn.
OHIO.		
Akron	Perkins Normal School	Helen Evans.
Athens	Ohio University	Constance T. McLeod.
Cincinnati	Cincinnati Association Kindergarten Training School.	Lillian H. Stone.
Do	Cincinnati Missionary Training School	Lottie N. Sinnett.
Cleveland	Cleveland Kindergarten Training School	Netta Faris.
Columbus	Columbus Normal School	Elizabeth Samuel.
Dayton	Dayton Normal School	Anna Littell.
Kent	State Normal School	John E. McGilvery.
Oberlin	Oberlin Kindergarten Training School	Clara May.
OKLAHOMA.		
Ada	East Central State Teachers' College	Anna Paxton.
Oklahoma City	Oklahoma City College	Mary E. Harris.
PENNSYLVANIA.		
Clarion	State Normal School	Lydia Millinger.
East Stroudsburg	do	Gertrude M. Rogers.
Harrisburg	Froebel Kindergarten Training School	Evelyn Barrington.
Jenkintown	Beechwood School	Eula Ableson.
Kutztown	State Normal School	
Lock Haven	Central State Normal School	Helen B. Lesher.
Mansfield	State Normal School	Edna Bond.
Millersville	do	Annie Gochnauer.
Philadelphia	Philadelphia Normal School	Mary Adair.
Do	Temple University	Lucinda P. MacKenzie.
Do	Training School for Kindergartners	Adelaide T. Illman.
Pittsburgh	Training School for Teachers, Colfax School No. 1.	H. B. Davis.
Do	School of Childhood, University of Pittsburgh.	
Shippensburg	Cumberland Valley State Normal School	Mary Rachel Harris.
Slippery Rock	State Normal School	Mrs. George Hamm.
Westchester	do	

XXVII.—PRINCIPALS OF NORMAL AND KINDERGARTEN TRAINING SCHOOLS—Contd.

3. DIRECTORS OF KINDERGARTEN TRAINING IN COLLEGES, NORMAL SCHOOLS, AND IN KINDERGARTEN TRAINING SCHOOLS—Continued.

Location.	Name of institution.	Director of kindergarten training.
RHODE ISLAND.		
Providence	Rhode Island College of Education	Lucile Faith Manatt.
SOUTH CAROLINA.		
Rockhill	Winthrop College	Minnie Macfeat.
SOUTH DAKOTA.		
Aberdeen	Northern Normal and Industrial School	Lida M. Williams.
Madison	State Normal School	Mrs. Anna M. Brady.
Springfield	do	Lillie S. Cooper.
TEXAS.		
Canyon	West Texas State Normal College	Edna E. Haines.
Commerce	East Texas Normal College	Durald Boren.
Denton	North Texas State Normal College	Evalina Harrington.
Do	College of Industrial Arts	Mabel M. Osgood.
Fort Worth	Fort Worth Kindergarten Training School.	Mary G. Waite.
San Marcus	Southwest Texas State Normal College	Helen M. Christianson.
UTAH.		
Provo	Brigham Young University	Ida Smoot Dusenberry.
Salt Lake City	University of Utah	Rose Jones.
VIRGINIA.		
Farmville	State Normal School	Mabel L. Culkin.
Harrisonburg	do	Mary L. Seeger.
WASHINGTON.		
Bellingham	State Normal School	Gertrude Earhart.
Ellensburg	do	Clara Meisner.
WISCONSIN.		
Milwaukee	State Normal School	Louise M. Alder.
Superior	do	Caroline D. Barbour.

XXVIII.—SUMMER SCHOOL DIRECTORS.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
ALABAMA.				
Auburn	Alabama Polytechnic Institute	Z. V. Judd	June 8	July 16
Birmingham	Howard College	Wm. E. Bohannon	June 5	July 15
Daphne	Daphne State Normal School	H. H. Holmes	do	July 22
Florence	State Normal School	Henry J. Willingham.	May 28	Aug. 15
Jacksonville	do	C. W. Daugette	June 6	Aug. 19
Livingston	do	G. W. Brock	June 1	Aug. 15
Marion	Judson College	Paul F. Keeton	June 7	Aug. 8
Montgomery	State Normal School (colored)	J. W. Beverly	June 1	July 16
Do	Woman's College of Alabama	M. W. Swartz	June 24	Aug. 5
Troy	State Normal School	E. M. Shackelford	June 6	Aug. 19
Tuskegee	Tuskegee Normal and Industrial Institute (colored).	E. C. Roberts	do	July 15
University	University of Alabama	James J. Doster	Juno 5	July 20
ARIZONA.				
Flagstaff	Northern Arizona Normal School	H. E. Hendrix	June 20	Aug. 26
Tucson	University of Arizona	Rufus B. von Klein Smid.	July 1	Aug. 15

XXVIII.—Summer School Directors—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
ARKANSAS.				
Arkadelphia	Ouachita College	Charles E. Dicken	June 1	July 31
Conway	Arkansas State Normal School			
Do	Hendricks College	J. H. Reynolds	June 8	June 15
Fayetteville	University of Arkansas	J. R. Jewell	June 26	July 30
CALIFORNIA.				
Arcata	Humboldt State Normal School	(No summer school in 1920.)	June 20	July 31
Berkeley	University of California	Walter Morris Hart	...do...	July 30
Claremont	Pomona College	James A. Blaisdell	June 25	Aug. 8
Huntington Lake	Fresno State Normal School			
Laguna Beach	Pomona College Marine Laboratory	W. A. Hilton	June 26	Aug. 9
Los Angeles	University of California (Southern Division).	Monroe E. Deutsch	June 20	July 30
Do	University of Southern California	Rockwell D. Hunt	June 27	Aug. 5
Pacific Grove	Hopkins Marine Station (Leland Stanford Junior University).	W. K. Fisher	June 17	Sept. 1
St. Helena	Pacific Union College	G. F. Wolfkill		
San Diego	State Normal School	E. L. Hardy	July 27	Aug. 2
San Francisco	San Francisco State Normal School	Archibald B. Anderson.	July 1	Aug. 1
San Jose	State Normal School	(No summer school in 1920.)	June 25	Aug. 6
Santa Barbara	State Normal School of Manual Arts and Home Economics.	Clarence L. Phelps	June 27	Sept. 16
Santa Clara	University of Santa Clara	T. L. Murphy	July 18	Aug. 13
Stanford University.	Leland Stanford Junior University	Ray Lyman Wilbur	June 21	Aug. 31
Swanton	Camp California Summer School of Surveying (University of California).	A. C. Alvarez	May 12	June 9
COLORADO.				
Boulder	University of Colorado	Milo G. Durham		
Denver	Denver Normal School	M. F. Miller	June 13	Aug. 18
Do	School of Ophthalmology (University of Colorado).	W. D. Engle	June 20	July 29
Fort Collins	Colorado Agricultural College	George T. Avery	...do...	July 30
Golden	Colorado School of Mines	Victor C. Alderson	July 20	Aug. 28
Greeley	Colorado State Teachers' College	J. G. Crabbe	June 15	Aug. 26
Gunnison	Colorado State Normal School	Samuel Quigley	...do...	Aug. 21
Tolland	School of Mountain Field Biology (University of Colorado).			
University Park	University of Denver	Wilber D. Engle	June 28	July 29
Woodland Park	Summer School of Surveying (Colorado College).			
CONNECTICUT.				
Danbury	State Normal Training School			
New Haven	New Haven Normal School of Gymnastics.	E. Herman Arnold	July 27	Aug. 31
Do	Yale University	J. S. Meader	July 10	Aug. 10
DELAWARE.				
Newark	Delaware College	W. A. Wilkinson	June 27	Aug. 5
DISTRICT OF COLUMBIA.				
Washington	American University	Albert H. Putney	June 2	Aug. 28
Washington (Brookland).	Catholic Sisters' College (Catholic University of America).	T. E. Shields	July 4	Aug. 11
Washington	George Washington University	W. C. Ruediger	June 20	Aug. 19
Do	Graduate Course in Agriculture			
Do	National University Law School			
Do	School of Pan American and Foreign Commerce.	Clarence J. Owens	July 19	Aug. 21
Do	Trinity College	Sister Catherine Aloysius.	July —	Sept. —
FLORIDA.				
Gainesville	University of Florida	W. H. Cox	June 12	Aug. 10
Madison	Florida Normal Institute	M. S. McGregor	June 15	Aug. 29
Tallahassee	Florida State College for Women	E. Conradi	June 20	Aug. 12

XXVIII.—SUMMER SCHOOL DIRECTORS—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
GEORGIA.				
Athens	University of Georgia	T. J. Woofter	June 25	Aug. 1
Atlanta	Georgia School of Technology	A. B. Morton	July 27	Sept. 16
Dahlonega	North Georgia Agricultural College	W. L. Ash	June 15	Aug. 1
Demorest	Piedmont College	Frank E. Jenkins	June 8	Aug. 31
Forsyth	Bessie Tift College	George P. Wilson	June 7	Aug. 10
Macon	Mercer University	Peyton Jacob	June 15	Aug. 30
Milledgeville	Georgia Normal and Industrial College	M. M. Parke	June 14	July 22
Oxford	Emory University	Theodore H. Jack	June 21	Aug. 27
Valdosta	South Georgia State Normal College	R. H. Powell	June 1	June 24
IDAHO.				
Albion	State Normal School	C. E. Bocock	June 6	Aug. 5
Lewiston	do	O. M. Elliott	June 2	Aug. 10
Moscow	University of Idaho	Jay Glover Eldridge	June 13	July 22
ILLINOIS.				
Carbondale	Southern Illinois State Normal University.	H. W. Shryock	June 24	Aug. 1
Carthage	Carthage College	H. D. Hoover	June 15	Do.
Charleston	Eastern Illinois State Normal School	Livingston C. Lord	June 13	July 22
Chicago	American College of Physical Education.	M. A. Wood	June 29	Aug. 7
Do	Armour Institute of Technology	H. M. Raymond	July 20	Aug. 1
Do	Chicago Normal College	William P. Owen	June 27	July 29
Do	Chicago Normal School of Physical Education.	Mina McEachern	June 28	Aug. 7
Do	De Paul University	Thomas C. Powers	June 27	Aug. 5
Do	Lewis Institute	George H. Carman	July 3	Aug. 25
Do	Loyola University	Frederic Seidenburg	June 20	Aug. 15
Do	National Kindergarten and Elementary College.	Edna Dean Baker	do	Aug. 12
Do	Pestalozzi-Froebel Teachers College	Berthatt Hegner	June 24	Aug. 2
Do	University of Chicago	Shailer Mathews	June 20	Sept. 2
De Kalb	Northern Illinois State Normal School.	J. Stanley Brown	June 10	Aug. 25
Evanston	Garrett Biblical Institute	Charles M. Stuart	June 15	Aug. 29
Do	Northwestern University	Roy C. Flickinger	June 20	Aug. 20
Ewing	Ewing College	H. A. Smoot	May 22	Do.
Lebanon	McKendree College	W. C. Walton	June 20	Aug. 14
Macomb	Western Illinois State Normal School.	W. P. Morgan	June 13	July 22
Normal	Illinois State Normal University	David Felmley	do	Aug. 31
Oak Park	Concordia Teacher's College	W. C. Kohn	July 5	Aug. 15
Peoria	Bradley Polytechnic Institute	Albert F. Siepert	June 20	July 25
Rock Island	Augustana College and Theological Seminary.	A. R. Wallin	June 13	July 22
Urbana	University of Illinois	C. E. Chadsey	June 20	Aug. 13
Wheaton	Wheaton College	William F. Rice	June 21	Do.
INDIANA.				
Angola	Tri-State College	L. M. Sniff	June 1	Aug. 30
Bloomington	Indiana University	H. L. Smith	June 13	Aug. 7
Danville	Central Normal College	Jonathan Rigdon	May 31	Aug. 18
Earlham	Earlham College	Joseph Herschel Coffin	June 13	Aug. 26
Evansville	Evansville College	Alfred F. Hughes	June 22	Sept. 2
Fort Wayne	Fort Wayne Normal School	Flora Wilber	do	July 30
Franklin	Franklin College	Henry Noble Sherwood	Apr. 5	Do.
Goshen	Goshen College	C. B. Blosser	June 20	Sept. 2
Greencastle	De Pauw University	H. B. Gough	June 10	July 20
Hanover	Hanover College	W. A. Willis	June 14	Aug. 26
Indianapolis	Butler College	Thomas Carr Howe	June 21	Aug. 14
Do	Indiana Central University	H. W. Marshall	May 23	Aug. 15
Do	Indiana University School of Medicine			
Do	North American Gymnastic Union, Normal College.	Emil Rath	July 5	July 30
Do	Teacher's College of Indianapolis	Eliza A. Baker	May	Sept.
La Fayette	Purdue University	George L. Roberts	June 9	Aug. 10
Marion	Marion College	(No school the summer of 1920).	June 6	Aug. 23
Muncie	Indiana State Normal School	T. J. Breitwieser	June 20	Sept. 2
Notre Dame	St. Mary's College and Academy	Sister M. Lucretia	June 30	Aug. 5
Do	University of Notre Dame	James A. Barns	June 25	Aug. 10
Oakland City	Oakland City College	W. P. Dearing	June 6	Aug. 26
Terre Haute	Indiana State Normal School	William Wood Parsons	June 20	Sept. 2
Valparaiso	Valparaiso University	Henry Kinsey Brown	May 31	Aug. 18
Winona Lake	Winona Normal and Indiana University Extension.	R W. Townsend F. W. Shockley	May 3	Sept. 19

XXVIII.—SUMMER SCHOOL DIRECTORS—Contonued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
IOWA.				
Ames	Iowa State College of Agriculture and Mechanical Arts.	G. M. Wilson	June 13	Aug. 26
Cedar Falls	Iowa State Teacher's College	H. H. Seerley	June 1	Aug. 19
Cedar Rapids	Coe College	W. S. Newell	June 20	Aug. 27
Des Moines	Des Moines College	James P. Stephenson	June 6	Aug. 12
Do	Drake University	A. Holmes	June 15	Aug. 25
Dubuque	Columbia College	James B. Coraney	June 20	Aug. 27
Do	Mount St. Joseph's College	Sister M. Antonia	July 28	Aug. 6
Fairfield	Parsons College	Howard McDonald	June 13	Aug. 20
Fayette	Upper Iowa University	C. P. Colegrove	do	Do.
Indianola	Simpson College	J. P. McCoy	June 15	Aug. 23
Iowa City	State University of Iowa	Charles H. Weller	June 20	Aug. 27
Iowa Falls	Ellsworth College	Ido Franklin Meyer	June 13	Aug. 20
Milford	MacBride Lakeside Laboratory (Iowa State University).	Robert B. Wylie	June 20	Aug. 27
Mount Pleasant	Iowa Wesleyan College			
Mount Vernon	Cornell College	Charles W. Flint	June 13	
Oskaloosa	Penn College	F. C. Stanley	June 3	Aug. 15
Sioux City	Morningside College	E. A. Brown	June 9	Aug. 11
KANSAS.				
Baldwin	Baker University	C. S. Parmenter	June 9	July 23
Emporia	State Normal School	Thomas W. Butcher	June 1	July 30
Hays	Fort Hays Kansas Normal School	W. A. Lewis	do	Do.
Kansas City	Kansas City University	W. A. Reese	June 8	July 17
Lawrence	University of Kansas	Frederick J. Kelly	June 13	Aug. 19
Lindsborg	Bethany College	Ernst F. Pihlblad	June 6	Aug. 6
Manhattan	Kansas State Agricultural College	Edwin L. Holton	June 3	Aug. 5
McPherson	McPherson College	J. A. Blair	June 1	July 15
Pittsburg	State Manual Training Normal School	W. A. Brandenburg	May 31	July 29
Salina	Kansas Wesleyan University	A. H. King	June 2	July 31
Topeka	Washburn College	D. L. McEachman	June 13	July 23
Wichita	Fairmount College	Walter H. Rollins	June 2	July 28
Do	Friend's University		June 1	July 31
Wingfield	Southwestern College	Mark Ewald	June 6	July 20
KENTUCKY.				
Berea	Berea College	Cloyd N. McAllister	June 10	Aug. 18
Bowling Green	Western Kentucky State Normal School.	H. H. Cherry	June 27	Aug. 19
Frankfort	Kentucky Normal and Industrial Institute (colored).	G. P. Russell	June 15	July 18
Lexington	University of Kentucky	J. T. C. Noe	June 27	Aug. 6
Louisa	Kentucky Normal College	Edward M. Kennison	June 20	July 30
Richmond	Eastern Kentucky State Normal School.			
LOUISIANA.				
Baton Rouge	Louisiana State University and A. and M. College.	Delmar T. Powers	June 15	July 27
Natchitoches	Louisiana State Normal School	V. L. Roy	June 8	July 18
New Orleans	Tulane University of Louisiana	A. B. Dinwiddie	June 15	Aug. 15
Do	Tulane University of Louisiana, School of Medicine.	Isadore Dyer	June 13	Aug. 1
Pineville	Louisiana College	C. Cothingham	June 5	July 31
MAINE.				
Castine	Eastern State Normal School	William D. Hall	July 18	Aug. 26
Farmington	State Normal School	Wilbert G. Mallett	June 27	Aug. 6
Fort Kent	Madawaska Training School			
Gorham	Western State Normal School	W. E. Russell		
Lewiston	Bates College	Robert A. F. McDonald.	July 5	Aug. 5
Machias	Washington State Normal School	William L. Powers	July 7	July 28
Orono	University of Maine	James S. Stevens	June 27	Aug. 8
Presque Isle	Aroostook Normal School	San Lorenzo Merriman	July 14	Aug. 21
Technology	Surveying Camp of Massachusetts, Institute of Technology.	Arthur G. Robbins	Aug. 2	Sept. 23

XXVIII.—SUMMER SCHOOL DIRECTORS—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
MARYLAND.				
Annapolis	St. John's College	Sydney S. Handy	June 25	Aug. 6
Baltimore	Baltimore Teacher's Training School (white).	Norman W. Cameron	June 28	Do.
Do	Baltimore Teacher's Training School (colored).	do	July 29	Aug. 7
Do	Johns Hopkins University	E. F. Buchner	July 1	Aug. 14
Do	Morgan College	L. M. McCoy	July 6	Do.
College Park	Maryland University	H. F. Cotterman	June 20	July 29
Frostburg	Maryland State Normal School	James Widdowson	June	Aug.
Towson	do	Henry S. West	June 20	July 29
MASSACHUSETTS.				
Amherst	Massachusetts Agricultural College	George L. Farley	July 23	July 30
Boston	Boston University	Alexander H. Rice	July 7	Aug. 22
Do	Harvard Graduate School of Medicine	A. S. Begg	June 1	Sept. 30
Do	Simmons College	Henry Lefavour	July 5	Aug. 12
Cambridge	Harvard University (School of Arts and Sciences).	A. F. Whittem	do	Aug. 13
Do	Harvard School of Physical Education	William H. Geer	do	Do.
Do	Massachusetts Institute of Technology	R. C. Maclaurin	June 17	Sept. 1
Fitchburg	State Normal School	John G. Thompson	July 5	Aug. 27
Framingham	do	W. H. Meier	July 18	Aug. 7
Hyannis	do	William A. Baldwin	July 1	Sept. 1
Newton Center	Newton Theological Institute	Henry K. Rowe	June 13	June 24
Northampton	Smith College, Training School for Social Workers.	F. Stuart Chapin	July 5	Aug. 30
Woods Hole	Marine Biological Laboratory	Frank R. Lillie	June 1	Oct 1
MICHIGAN.				
Ann Arbor	University of Michigan	Edward H. Kraus	June 27	Aug. 26
Battle Creek	Normal School of Physical Education	D. Ward Crampton	June 6	June 27
Berrien Springs	Emmanuel Missionary College	Frederick Griggs	June 28	Aug. 23
East Lansing	Michigan Agricultural College	E. H. Ryder	June 21	Aug. 1
Houghton	Michigan College of Mines	F. W. McNair	June 8	Aug. 28
Kalamazoo	Western State Normal School	D. B. Waldo	June 27	Aug. 5
Marquette	Northern State Normal School	James H. Kaye	do	Do.
Mount Pleasant	Central State Normal School	E. C. Wariner	do	Do.
Topinabee	University of Michigan Biological Station.	G. A. LaRue	July 5	Aug. 26
Ypsilanti	Michigan State Normal College	Charles McKenny	June 27	Aug. 9
MINNESOTA.				
Bemidji	State Normal School	M. W. Deputy	June 15	Aug. 1
Duluth	do	E. M. Bohannon	June 13	July 22
Mankato	do	C. H. Cooper	June 20	July 29
Minneapolis	University of Minnesota	L. D. Coffman	do	July 30
Moorhead	State Normal School	Oliver M. Dickerson	June 13	July 25
St. Cloud	do	J. C. Brown	do	July 29
Winona	College of Saint Teresa	Mary A Molloy	July 1	Aug. 12
Do	State Normal School	G. E. Maxwell	June 15	July 24
MISSISSIPPI.				
Agricultural College	Mississippi A. and M. College	J. E. Robert	June 10	July 20
Clinton	Mississippi College	J. W. Provine	June —	July —
Grenada	Grenada College	L. H. Jobe	July 1	Aug. 15
Hattiesburg	Mississippi Normal College	Joe Cook	May 30	July 8
Jackson	Millsaps College	George L. Harrell	June 15	Aug. 1
Meridian	State Normal School	W. C. Williams	June 7	July 11
Do	Meridian College and Conservatory			
University	University of Mississippi	Christopher Longest	June 5	July 20
MISSOURI.				
Albany	Palmer College	F. G. Coffin	June 1	
Cameron	Missouri Wesleyan College	Cameron Harmon	June 6	July 31
Cape Girardeau	Southeast Missouri State Teachers' College.	W. S. Dearmont	Apr. 18	Aug. 5
Columbia	University of Missouri	A. Ross Hill	Apr. 28	Aug. 17
Kirksville	State Teachers' College	John R. Kirk	May 31	Aug. 5
Marshall	Missouri Valley College	I. N. Evrard	June 6	Aug. 13

XXVIII.—Summer School Directors—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
MISSOURI—contd.				
Maryville	State Normal School	Ira Richardson	May 30	Aug. 15
Rolla	State School of Mines and Metallurgy (University of Missouri).	A. L. McRae	May 1	Aug. 15
St. Louis	Forest Park College School of Music	Mrs. Anna Sneed Cairns.	June 3	Aug. —
Do	Harris Teachers' College	E. George Payne	June 20	July 23
Do	St. Louis University	William F. Robison	June 9	Aug. 6
Springfield	Southwestern Missouri State Teacher's College.	Clyde M. Hill	May 31	Aug. 4
Warrensburg	Central Missouri State Teachers' College.	E. L. Hendricks	June 6	Aug. 12
Warrenton	Central Wesleyan College	O. E. Kriege	June 13	Aug. 20
MONTANA.				
Bozeman	Montana College of Agriculture and Mechanical Arts.	J. H. Holst	June 21	July 30
Dillon	Montana State Normal College	S. E. Davis	June 20	Sept. 2
Missoula	State University of Montana	Jesse P. Rowe	June 13	Aug. 26
Polson	University of Montana Biological Station.			
NEBRASKA.				
Bellevue	Bellevue College			
Chadron	State Normal School	Robt. I. Elliott	June 6	July 30
Collegeview	Union College	Clemont F. Benson	June 2	July 27
Fremont	Fremont College			
Do	Midland College	E. E. Stauffer	June 13	Aug. 12
Hastings	Hastings College	Frank E. Weyer	..do..	Aug. 6
Kearney	State Normal School	George E. Martin	June 1	Aug. 1
Lincoln	University of Nebraska	Samuel Avery	June 6	Aug. 27
Omaha	Creighton University	W. P. Whelan	June 20	Aug. 2
Do	University of Omaha	P. R. Stevenson	June 15	Aug. 13
Peru	State Normal School	E. L. Rouse	June 6	July 29
University Place	Nebraska Wesleyan University	I. B. Schreckengast	May 31	July 22
Wayne	State Normal School	U. S. Conn	June 2	July 30
York	York College	H. U. Roop	June 6	July 31
NEVADA.				
Reno	University of Nevada	Abbie Louise Day	June 19	July 28
NEW HAMPSHIRE.				
Keene	State Normal School (joint summer sessions of New Hampshire Normal Schools).	Wallace E. Mason	July 11	Aug. 19
NEW JERSEY.				
Convent	College of St. Elizabeth	Sister Mary Loretta	July 12	Aug. 15
Hoboken	Stevens Institute of Technology	Alex C. Humphreys	Aug. 10	Sept. 7
Madison	Drew Theological Seminary	Ezra Squier Tipple		
New Brunswick	Rutger's Scientific School	Charles H. Elliott	June 27	Aug. 5
NEW MEXICO.				
East Las Vegas	New Mexico Normal University	Frank H. H. Roberts	June 2	July 30
Silver City	New Mexico Normal School	W. O. Hall	June 1	Aug. 30
Socorro	New Mexico State School of Mines	A. X. Illinski	..do..	Aug. 15
NEW YORK.				
Albany	New York State College for Teachers	Harlan H. Horner	July 5	Aug. 13
Alfred	Alfred University	Paul E. Titsworth	..do..	Aug. 17
Auburn	Auburn Theological Seminary (summer School of Theology and for Christian Workers).	George B. Stewart	..do..	Aug. 7
Brockport	State Normal School	Alfred C. Thompson	July 6	Aug. 17
Brooklyn	Adelphi College	Adelbert G. Fradenburgh.	July 5	Aug. 12
Buffalo	Buffalo State Normal School	Harry W. Rockwell	..do..	Aug. 6
Do	Canisius College	M. J. Ahern	..do..	Aug. 12
Do	University of Buffalo	Julian Park	July 10	July 21
Geneseo	State Normal School	James V. Sturges	July 5	Aug. 14

XXVIII.—Summer School Directors—Continued.

1. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
RHODE ISLAND.				
Providence	Rhode Island College of Education	John L. Alger	July 5	Aug. 12
SOUTH CAROLINA.				
Clinton	Presbyterian College of South Carolina	D. M. Douglas	June 14	Aug. 4
Columbia	University of South Carolina	L. T. Baker		
Orangeburg	State A. and M. School (colored)	R. S. Wilkinson	June 13	July 22
Rock Hill	Winthrop Normal and Industrial College.	D. B. Johnson	June 14	July 24
Spartansburg	Converse College	Guy E. Snavely	June 27	Aug. 20
Do	Wofford College	A. Mason Du Pre	June 15	Aug. 15
SOUTH DAKOTA.				
Aberdeen	Northern Normal and Industrial School.	Harold W. Groght	June 13	Aug. 19
Brookings	South Dakota State College of Agriculture and Mechanic Arts.	H. B. Mathews	June 27	Aug. 5
Huron	Huron College	H. G. Lawrence	June 14	July 23
Madison	State Normal School	B. M. Lawrence	June 13	Aug. 26
Mitchell	Dakota Wesleyan University	J. C. Hazzard	...do...	Do.
Sioux Falls	Augustana College and Lutheran Normal School.	J. G. Berdahl	June 15	July 30
Do	Sioux Falls College	M. F. Martini	June 6	Aug. 13
Spearfish	State Normal School	E. C. Woodburn	June 10	Aug. 25
Springfield	Southern State Normal School	G. G. Lawrence	June 16	Aug. 28
Vermilion	University of South Dakota	William A. Cook	June 27	Aug. 6
Yankton	Yankton College	M. A. Stewart	June 15	Aug. 1
TENNESSEE.				
Chattanooga	University of Chattanooga			
Harrogate	Lincoln Memorial University	B. A. Wise	May 16	Aug. 5
Jefferson City	Carson and Newman College	(No summer school, 1920).	June 7	Aug. 15
Johnson City	East Tennessee State Normal School	S. G. Gilbreath	June 6	Aug. 13
Knoxville	Summer School of the South (University of Tennessee).	(No summer school, 1920).	June 1	Sept. 1
Memphis	West Tennessee State Normal School	A. A. Kincannon	June 10	July 15
Murfreesboro	Middle Tennessee State Normal School	P. A. Lyon	June 9	Aug. 13
Nashville	Fisk University (colored)	F. A. McKenzie	June 3	Aug. 26
Do	George Peabody College	Bruce R. Payne	June 9	Aug. 27
Do	Tennessee Agricultural and Industrial State Normal School.	W. J. Hale	June 1	Aug. 15
Sewanee	University of the South	George M. Baker	June 18	Aug. 31
TEXAS.				
Abilene	Simmons College	Jefferson D. Sandefer	June 15	Aug. 20
Austin	University of Texas	Frederick Eby	June 14	Sept. 3
Belton	Baylor Female College	Paul C. Porter	June 8	Aug. 19
Brownwood	Daniel Baker College	(No summer school, 1920).	June 15	Aug. 30
Canyon	West Texas State Normal College	J. A. Hill	June 10	Aug. 28
College Station	Agricultural and Mechanical College of Texas.	J. O. Morgan	June 6	Aug. 27
Commerce	East Texas Normal College	R. B. Binnion	June 8	Aug. 15
Dallas	Southern Methodist University	A. S. Pegnes	June 15	Sept. 3
Denton	College of Industrial Arts	E. V. White	June 6	Aug. 29
Do	North Texas State Normal College	W. H. Bruce	June 7	Aug. 13
Fort Worth	Southwestern Baptist Theological Seminary.	Lee R. Scarborough	June 1	July 9
Do	Texas Christian University	Clinton Lockhart	June 13	July 25
Do	Texas College for Young Women	Henry E. Stout	June 1	Do.
Georgetown	Southwestern University	W. R. Tinsley	June 16	Sept. 6
Huntsville	Sam Houston State Normal Institute	H. F. Estill	June 15	Aug. 20
Prairie View	Prairie View State Normal and Industrial College (colored).	J. G. Osborne	...do...	Aug. 19
San Marcos	Southwest Texas State Normal School	C. E. Evans	June 13	Do.
Sherman	Austin College	T. S. Clyce	June 15	Sept. 12
Tehuacana	Westminster College	E. M. Comfort	June 20	Aug. 20
Waco	Baylor University	S. P. Brooks	...do...	Sept. 4
Waxahachie	Trinity University			

XXVIII.—Summer School Directors—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
UTAH.				
Logan	Agricultural College of Utah	James H. Linford	June 6	Aug. 26
Salt Lake City	University of Utah	Milton Bennion	June 8	Aug. 27
VERMONT.				
Burlington	University of Vermont	James F. Messenger	July 4	Aug. 13
Castleton	State Normal School			
Middlebury	Middlebury College	Edward D. Collins	July 1	Aug. 20
Northfield	Norwich University	H. R. Roberts	Aug. 15	Sept. 15
VIRGINIA.				
Bristol	Sullins College	W. E. Martin	June —	Aug. —
Charlottesville	University of Virginia	Charles G. Maphis	June 20	Sept. 3
East Radford	State Normal School for Women	John Preston McConnell.	June 14	Aug. 28
Emory	Emory and Henry College	H. M. Henry		
Fredericksburg	State Normal School for Women	A. B. Chandler, jr.	June 14	July 28
Hampton	Hampton Institute (colored)	George P. Phenix	June 15	July 31
Harrisonburg	State Normal and Industrial School for Women.	Samuel Page Duke	June 20	Sept. 2
Petersburg	Virginia Normal and Industrial Institute (colored).	John Manuel Gandy	June 21	July 31
Richmond	Richmond College	H. B. Handy	June 16	July 30
Williamsburg	College of William and Mary	H. E. Bennett	June 15	Sept. 1
WASHINGTON.				
Bellingham	State Normal School	George W. Nash	June 6	Aug. 26
Centralia	Washington State Normal School	Alexander C. Roberts	...do	Aug. 3
Cheney	State Normal School	N. D. Showalter	May 31	Aug. 13
Ellensburg	...do	George H. Black	June 3	Aug. 26
Friday Harbor	Puget Sound Marine Station (University of Washington).	T. C. Frye	June 22	Aug. 1
Pullman	State College of Washington	A. A. Cleveland	June 20	July 29
Puyallup	Summer School of Agriculture (State College of Washington).	Frank O. Kreager	...do	July 30
Seattle	University of Washington	Frederick E. Bolton	June 21	Aug. 30
Tacoma	College of Puget Sound	Chester L. Rich	June 14	Aug. 13
WEST VIRGINIA.				
Athens	Concord State Normal School	Fred A. Forster	June 16	Aug. 6
Bethany	Bethany College	Cloyd Goodnight	June 20	Aug. 13
Buckhannon	West Virginia Wesleyan College			
Elkins	Davis and Elkins College	James E. Allen	June 20	July 31
Fairmont	State Normal School	Joseph Rosier	June 13	Aug. 5
Glenville	...do	E. G. Rohrbough	June 10	Do.
Huntington	Marshall College	R. J. Sargent	June 13	July 22
Institute	West Virginia Collegiate Institute (colored).	John W. Davis	June 21	Do.
Morgantown	West Virginia University	Waitman Bark	June 15	Aug. 30
Salem	Salem College	S. Orestes Bond	June 6	Aug. 5
Shepherdstown	Shepherd College, State Normal School.	A. D. Kenamond	June 10	July 22
West Liberty	State Normal School	Howard J. McGinnis	June 13	Aug. 10
WISCONSIN.				
Beloit	Beloit College	William Albert Hamilton.	June 27	Aug. 6
Berlin	Green Lake County Training School			
Columbus	Columbia County Training School	M. C. Palmer	June 25	July 30
Gays Mills	Crawford County Training School	B. W. Wermick	June 15	July 25
Janesville	Rock County Training School	Frank J. Sowth	June 13	July 22
La Crosse	State Normal School	F. A. Cotton	June 20	July 30
Ladysmith	Rusk County Training School	B. Mock Dresden	July 1	Aug. 10
Madison	University of Wisconsin	S. H. Goodnight	June 27	Aug. 8
Marinette	Stephenson Training School	W. E. Morton	June 21	Aug. 7
Menominee	Stout Institute	Clyde Bowman	July 25	Aug. 26
Milwaukee	Marquette University	John P. McNichols	June 20	Aug. 6
Do	National Teachers' Seminary	(No summer school, 1920).	June 27	July 29
Do	State Normal School	C. G. Pearse	June 13	Sept. 2
Monroe	Green Country Training School	C. H. Dietz	June 10	Aug. 10

XXVIII.—SUMMER SCHOOL DIRECTORS—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921. Opening.	Probable date of session in 1921. Closing.
WISCONSIN—contd.				
Oshkosh	State Normal School	H. A. Brown	June 20	July 29
Phillips	Price County Training School	William Milne	June 13	July 22
Platteville	State Normal School	J. C. Brockut	June 20	Aug. 5
Reedsburg	Sauk County Teachers' Training School.	(No summer school, 1920.)	June 15	Aug. 1
Richland Center	Richland County Normal School	A. A. Thomson	June 27	Do.
River Falls	State Normal School	J. H. Ames	June 20	July 30
Sinsinawa	Saint Clara College	Dominican Sisters	June 15	July 31
Stevens Point	State Normal School	John F. Sims	June 13	Aug. 1
Superior	do	V. E. McCaskill	June 20	Sept. 1
Viroqua	Vernon County Normal	(No session in 1920)	June 25	Aug. 8
Whitewater	do	F. S. Hyer	June 15	Aug. 21
WYOMING.				
Laramie	University of Wyoming	C. R. Maxwell	June 20	July 30

II. SECONDARY SCHOOLS (INCLUDING INSTITUTIONS OF HIGHER RANK NOT APPEARING IN PART I).

ALABAMA.				
Birmingham	Miles Memorial College (colored)			
Huntsville	Oakwood Junior College (colored)	J. I. Beardsley	June 1	July 31
Montevallo	Alabama Technical Institute and College for Women.	T. W. Palmer	do	July 2
Tuscaloosa	Stillman Institute	Paul H. Moore	do	July 12
ARIZONA.				
Flagstaff	Evans School	Henry David Evans	June 1	Sept. 1
CALIFORNIA.				
Berkeley	California School of Arts and Crafts	Frederick H. Meyer	June 20	July 30
Huntington Lake	Sierra School	W. B. Givens	July 24	Sept. 7
Los Angeles	Los Angeles School of Art and Design.			
Piedmont	Outdoor Sketching and Painting (California School of Arts and Crafts).			
Riverside	Riverside Library Service School	Joseph F. Daniels	June 20	July 30
San Francisco	California School of Fine Arts	Lee F. Randolph	do	July 29
CONNECTICUT.				
East Canaan	Clarence H. White School of Photography.	Clarence H. White	July 1	Aug. 31
Greenwich	Greenwich School	Marietta L. Johnson	July 3	Aug. 24
Hartford	Hillyer Institute	A. E. Standish	June 27	Aug. 5
New Haven	Berkeley Tutoring School			
Do	University School			
Norwalk	The Harström School	Carl Axel Harström	Aug. 1	Sept. 20
Redding Ridge	Sanford School			
DELAWARE.				
Dover	State College for Colored Students	Jacob E. Jones	July 6	Aug. 23
DISTRICT OF COLUMBIA.				
Washington	Emerson Institute	W. H. Randolph	June 15	Sept. 1
FLORIDA.				
Tallahassee	Florida A. and M. College for Negroes.	Homer Thomas	July	Aug. —
GEORGIA.				
Mount Berry	Berry School	G. Leland Green	May 1	July 15
HAWAII.				
Honolulu	Honolulu Territorial School	William McCluskey	July 8	Aug. 19

XXVIII.—Summer School Directors—Continued.

II. SECONDARY SCHOOLS (INCLUDING INSTITUTIONS OF HIGHER RANK NOT APPEARING IN PART I)—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
IDAHO.				
Pocatello	Idaho Technical Institute			
Rexburg	Ricks Normal College	George L. Romney	June 6	July 15
ILLINOIS.				
Chicago	American Conservatory of Music	John J. Hattstaedt	June 27	July 30
Do	Applied Arts School	Florence H. Fitch	July 1	July 25
Do	Art Institute of Chicago	George W. Eggers	July 5	Sept. 10
Do	Chicago Academy of Fine Arts	Carl N. Werntz	June 27	Sept. 2
Do	Chicago Musical College	Carl D. Kinsey	...do	Aug. 7
Do	Chicago School of Civics and Philanthropy.	Graham Taylor	June 18	Sept. 1
Do	Columbia College of Expression	Mary A. Blood	July 6	Aug. 6
Do	Columbia Normal School of Physical Education.	....do	July 5	Aug. 17
Do	Columbia School of Music	Clare O. Reed	May 16	July 30
Do	Cosmopolitan School of Music and Dramatic Art.	William Carver Williams.	June 20	July 23
Do	Gregg Normal School	Henry J. Holm	July 6	Aug. 17
Do	Industrial Art School	Hugo B. Froelich	July 11	July 29
Do	School of Elementary and Home Education.	Mrs. Mary Boomer Page.	July 28	Aug. 7
Do	Sherwood Music School	Estelle A. Llewellyn	July 5	Aug. 13
Do	University of Chicago High School	Morton Snyder	June 20	Sept. 2
Evanston	American Institute of Normal Methods	Osborne McConathy	June 25	July 15
Lake Forest	University School of Music	Marta Milinouski	June 15	Aug. 1
Quincy	Gem City Business College	D. L. Musselman	June 1	Sept. 1
INDIANA.				
Culver	Culver Military School	L. R. Giguilliat	June 29	Aug. 24
Indianapolis	John Herron Art Institute	Harold Haven Brown.	June 13	July 23
Do	School for Librarians (Public Library Commission of Indiana).	William J. Hamilton.	June 20	July 30
North Manchester	Manchester College	Otho Winger	May 23	Aug. 14
St. Mary - of - The Woods.	St. Mary-of-The-Woods College	Mother M. Cleophas	July 2	Aug. 4
IOWA.				
Cedar Rapids	Palmer Method School	W. C. Henning	June 29	July 24
Cherokee	Mount St. Mary Normal Training School.	Sister Emmanuel	June 15	Aug. 7
LOUISIANA.				
Lafayette	Southwestern Louisiana Industrial Institute.	F. M. Hamilton	June 6	Aug. 6
Ruston	Louisiana Industrial Institute	J. E. Keeny	June 20	July 30
Baton Rouge	Southern University (colored)	J. S. Clark	June 14	June 23
Shreveport	Centenary College	W. R. Bourne	...do	Aug. 15
MAINE.				
Boothbay Harbor	Commonwealth School of Art and Industry.	Asa Grant Randall	July 11	Sept. 3
Ogunquit	School of Modeling			
MARYLAND.				
Baltimore	Morgan College (colored)			
Do	Peabody Conservatory of Music	Frederick R. Huber	July 5	Aug. 14
MASSACHUSETTS.				
Andover	Phillips Academy			
Auburndale	American Institute of Normal Methods	Osborne McConathy	July 6	July 27
Boston	Burdett College	I. L. Lindabury	July 1	Aug. 26
Do	Emerson College of Oratory	Walter Bradley Tripp.	July 5	Aug. 12
Do	Miss Farmer's School of Cookery	Alice Bradley	July 1	Aug. 1
Do	School of Eugenics			
Do	School of Expression	Anna B. Curry [1] S. S. Curry [2]	May 12	Oct. 1
Buzzards Bay	Old Colony Union Industrial School	Mrs. Maud Myhre	July 1	Do.

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[1] Conducted term in Asheville, N. C.

[2] Conducted term in Boston, Mass.

XXVIII.—Summer School Directors—Continued.

II. SECONDARY SCHOOLS (INCLUDING INSTITUTIONS OF HIGHER RANK NOT APPEARING IN PART I)—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
MASSACHUSETTS—continued.				
East Gloucester	Snell Art Class	Henry B. Snell	June 20	Sept. 10
Do	Breckenridge School of Painting	Hugh H. Breckenridge	July 5	Aug. 30
Lynn	Branch of Burdett College	H. W. Pelton	..do....	Aug. 19
Monterey	Berkshire Summer School	Raymond P. Ensign Ernest W. Watson	..do....	Aug. 13
Do	Institute of Music Pedagogy	Ralph L. Baldwin	July 11	July 29
Oak Bluffs	Treat's School	Edwin Bryant Treat	July 10	Sept. 20
Provincetown	Cape Cod School of Art	H. N. Campbell	July 1	Aug. 30
Do	School of Drawing and Painting	E. Ambrose Webster	June 1	Oct. 1
Springfield	Bay Pah Institute	M. F. Palmer	July 1	July 31
Vineyard Haven	Martha's Vineyard School of Art	Arthur R. Freedlander	..do....	Aug. 20
Woburn	Warren Academy Free Industrial School.	E. Chester Carter	July 5	Aug. 12
Worcester	Boys' Trade School	Albert J. Jameson	July 11	Aug. 20
Do	Girls' Trade School	Helen R. Hildreth	July 12	Do.
MICHIGAN.				
Big Rapids	Ferris Institute	W. N. Ferris	July —	Aug. 12
Grand Rapids	Grand Rapids Kindergarten Training School.	....	....	
Saugatuck	School of Painting	Frederick F. Fursman.	June 28	Sept. 3
MINNESOTA.				
Crookston	State Teachers Training School	....	....	
Fairbault	Shattuck School	John Hersey Wheeler.	June 20	July 30
Minneapolis	Humboldt College	J. P. Peterson	June 15	Aug. 15
Do	Minneapolis School of Art	Mary Moulton Cheyney.	June 13	July 23
Do	Minnesota College	Frank Nelson	May 31	July 22
Morris	Teachers Training School	....	....	
St. Paul	Globe Business College	G. S. Stephens	July 5	Aug. 29
MISSISSIPPI.				
Alcorn	Alcorn School	G. G. Hurst	July 15	Aug. 10
Clarksdale	Clarksdale Negro Normal	H. B. Heidelberg	Aug. 1	Sept. 5
Jackson	Jackson State Normal School for Colored Teachers.	C. E. Cain	July 12	Aug. 14
Mound Bayou	State Normal for Colored Teachers	J. H. Moseley	Aug. 1	Sept. 1
Shelby	Shelby Normal	J. M. Williamson	Aug. 1	Do.
MISSOURI.				
Jefferson City	Lincoln Institute	Clement Richardson	June 1	July 28
La Grange	La Grange College	John W. Crouch	June 6	Aug. 13
MONTANA.				
Lewistown	Central Montana School	F. L. Cummings	June 15	Aug. 31
NEW HAMPSHIRE.				
South Chatham	Mrs. Hill's School of Cookery	....	....	
NEW JERSEY.				
Allenhurst	Rand School	Edwin Watson Rand.	July 1	Sept. 15
Princeton	Princeton School	C. R. Morey	July 23	Sept. 18
Do	The Princeton Tutoring School	John Gale Hun	....	
NEW YORK.				
Albany	State Library School	Miss Sabra W. Vought.	July 6	Aug. 17
Brooklyn	Brooklyn Botanic Garden	Ellen Eddy Shaw	July 5	July 22
Do	Marquand School	Carroll N. Gibney	...do....	Aug. 12
Cold Harbor (L. I.)	Brooklyn Institute of Arts and Sciences.	C. B. Davenport	...do....	Aug. 16
Monroo	Mackenzie School	Jas. C. Mackenzie	...do....	Sept. 1

XXVIII.—Summer School Directors—Continued.

II. SECONDARY SCHOOLS (INCLUDING INSTITUTIONS OF HIGHER RANK NOT APPEARING IN PART I)—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
NEW YORK—contd.				
New York City	Art Student's League School			
Do	Brown School of Tutoring	Frederick L. Brown	July 6	Sept. 20
Do	Chalif Normal School of Dancing	Louis H. Chalif	May 30	July 8
Do	Massee Tutoring School	W. Wellington Massee.	June 24	Sept. 26
Do	National Academy of Design			
Do	New York Preparatory School	Emil E. Camerer	June 20	Sept. 2
Do	New York School of Fine and Applied Arts.	Frank Alvah Parsons.	July 6	Aug. 13
Do	New York School of Social Work	Porter R. Lee	July 6	Aug. 15
Do	Palmer Method School of Penmanship.	S. E. Bartow	July 5	July 31
Rochester	Rochester Athenaeum and Mechanics Institute.	Royal B. Farnum	June 20	Aug. 25
Do	School for Commercial Teachers	S. C. Williams	July 5	July 31
St. Josephs	St. Josephs School	Mother Polycarpa	July 9	Aug. 15
Tarrytown	Repton School	W. W. Barrett	July 1	Aug. 31
Woodstock	School of Landscape Painting	Charles Rosen Andrew Dosburg	June 15	Oct. 15
NORTH CAROLINA.				
Boone	Appalachian Training School	B. B. Dougherty	June 10	July 20
Brevard	Brevard Institute	L. B. Haynes	June 9	July 15
Buies Creek	Buies Creek Academy	J. A. Campbell	June 1	Do.
Durham	National Training School	James A. Shephard	June 20	July 31
Greensboro	Agricultural and Technical College	F. D. Bluford	June 19	July 28
NORTH DAKOTA.				
Wahpeton	State School of Science	Garland A. Bricker	June 13	July 23
OHIO.				
Berea	Rural Life School for Rural Pastors	E. E. Beauchamp	June 20	July 9
Cincinnati	Art Academy of Cincinnati	J. H. Gest	...do....	Aug. 27
Do	Ohio Mechanics Institute	John T. Faig	June 21	July 30
Columbus	Capitol College of Oratory and Music	Francis M. Moyers	June 15	July 31
Oberlin	Oberlin Business College	J. T. Henderson	June 14	Aug. 7
Willoughby	Andrew's Institute for Girls	S. D. Shankland	June 20	July 29
OKLAHOMA.				
Goodwell	Panhandle Agricultural Institute			
OREGON.				
Portland	Link's Business College	A. T. Link	June 1	Aug. 31
PENNSYLVANIA.				
Lancaster	Franklin and Marshall Academy	W. M. Hall	June 20	Aug. 1
Muncy	Lycoming County Normal School	Sylvester B. Dunlap	April	Sept.
Philadelphia	Brown Preparatory School	Alonzo Brown	June 20	Sept. 1
Do	Neff College	Silas Neff	July 1	July 31
Do	Pierce School of Business Administration.	Louis B. Moffett	July 5	Aug. 12
Do	Pennsylvania Museum and School of Industrial Art.	Otto F. Ege	...do....	July 30
Pittsburgh, (Mt. Oliver).	Byron W. King's School of Oratory, Elocution and Dramatic Culture.	Byron W. King	June 6	July 15
Swarthmore	Swarthmore Preparatory School	Willard P. Tomlinson.	July 5	Sept. 10
TENNESSEE.				
Cookeville	Tennessee Polytechnic Institute	Q. M. Smith	June 8	July 19
Walling	The Webb School	W. R. Webb	June 1	Sept. 1
TEXAS.				
Arlington	Grubbs Vocational College	Prof. Roach	June 15	Aug. 20
Clarendon	Clarendon College	S. H. Condron	June 1	July 14
San Antonio	Our Lady of the Lake College	Mother M. Philothea	June 28	Aug. 3
Stephenville	John Tarleton Agricultural College	J. B. Lane	June 7	Sept. 1

XXVIII.—Summer School Directors—Continued.

II. SECONDARY SCHOOLS (INCLUDING INSTITUTIONS OF HIGHER RANK NOT APPEARING IN PART I)—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
UTAH				
Provo	Brigham Young University	George H. Brimhall	June 2	Aug. 20
VIRGINIA.				
Lawrenceville	St. Paul Normal and Industrial School (Colored).	J. Alvin Russell	June 23	July 18
Manassas	Manassas Industrial School for Colored Youths.	Edward D. Howe	do	Do.
Norfolk	State Colored Normal School	T. C. Erwin	June 20	July 15
WASHINGTON.				
Seattle	Madison School for Boys	H. R. York	do	Aug. 20

III. SUMMER NORMAL TRAINING SCHOOLS.

CONNECTICUT.				
New Haven	State Summer Normal School	J. L. Meader	July 5	July 31
IDAHO.				
Boise	Boise Summer School for Teachers	P. J. Zimmers	June 13	July 11
MISSISSIPPI.				
Boongville	County Summer Normal School	T M. Milam	July 12	Ang. 23
Charleston	do	J. G. Bridges	July 19	Aug. 30
Greenwood	County Summer Normal (colored)		do	Do.
Grenada	do	L. H. Jobo	July 5	Aug. 16
Pontotoc	County Summer Normal School	John Donaldson	July 12	Aug. 23
Wesson	do	T. J. Cathy	July 19	Aug. 30
Tupelo	County Summer Normal (colored)	J. J. Weaver	July 5	Aug. 16
MONTANA.				
Lewistown	Summer School for Teachers	F. L. Cummings	June 15	Aug. 28
Terry	do	C. W. Grandey	June 7	Aug. 13
NEW JERSEY.				
Collingswood	State Summer School	C. A. Philhower	June 27	July 30
Newton	do	Amos H. Flake	do	Do.
Ocean City	do	James M. Stevens	do	Do.
NEW YORK.				
Cortland	Cortland Summer School	Luke J. McEvoy	July 4	Aug. 12
OREGON.				
Oregon City	County Summer School for Teachers	Brenton Vedder	Aug. 2	Aug. 20
TEXAS.				
Alpine	State Summer Normal School	A. W. Evans	June 19	Aug. 19
Athens	do	J. J. Montgomery	June 21	Do.
Austin	State Summer Normal School (colored)	Lily Rhambo	do	Do.
Beaumont	do	T. J. Charlton	do	Do.
Brownwood	State Summer Normal School	Thomas H. Tyler	do	Do.
Columbus	State Summer Normal School (colored).	D. S. Shanks	do	Do.
Corpus Christi	State Summer Normal School	J. Wier	do	Do.
Corsicana	State Summer Normal School (colored).	A. R. Foreman	do	Do.
Crockett	do	H. C. Langrum	do	Do.
Dallas	do	C. F. Carr	do	Do.
Fort Worth	do	J. Mason Brewer	do	Do.
Houston	State Summer Normal School	J. L. Reynolds	June 9	Do.
Jacksonville	do	R. T. Milner, jr	June 21	Do.
Marlin	State Summer Normal School (colored).	P A. Stamps	do	Do.
Marshall	do	H. B. Pemberton	do	Do.
Do	State Summer Normal School	John S. Humphreys	do	Do.

XXVIII.—SUMMER SCHOOL DIRECTORS—Continued.

III. SUMMER NORMAL TRAINING SCHOOLS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
TEXAS—continued.				
Nacogdoches	State Summer Normal School (colored).	E. J. Campbell	June 21	Aug. 19
Palacios	State Summer Normal School	H. A. Miller	do	Do.
Paris	State Summer Normal School (colored).	J. C. Foster	do	Do.
Seguin	do	E. L. Mellon	Juno 16	Do.
Sherman	State Summer Normal School	C. J. Denton	June 21	Do.
Tyler	State Summer Normal School (colored).	W. H. Seales	do	Do.
Weatherford	State Summer Normal School	W. O. Dewees	do	Do.
Yoakum	do	L. B. McGuffin	do	Do.
VIRGINIA.				
Fredericksburg	Summer Normal School (colored)	Rev. W. L. Ransome	June 22	July 17
Gretna	do	A. M. Walker	do	Do.
Houston	do	John M. Botts	do	Do.
Roanoke	do	Prof. W. F. Grasty	do	Do.

IV. SUMMER SCHOOL FOR TEACHERS OF EXCEPTIONAL CLASSES.

Location.	Summer school.	Director in 1920.	Opening.	Closing.
Fairbault, Minn	Courses in mental deficiency, Minnesota School for the Feeble Minded.	G. C. Hanna	July 10	Aug. 20
St. Louis, Mo	Summer Normal Central Institute for the Deaf.	M. A. Goldstein	June 15	July 15
Vineland, N. J	Summer School for Teachers of Backward or Mentally Deficient Children.	(No school, 1920)	July 18	Aug. 29
Rome, N. Y	Training School of the Rome State Custodial Asylum.	Charles Bernstein	July 1	Aug. 1

V. Y. M. C. A. AND Y. W. C. A. SUMMER SCHOOLS AND CAMPS.

Location.	Summer school.	Director in 1920.	Opening.	Closing.
CALIFORNIA.				
Asilomar	Pacific Summer School of Y. M. C. A.	F. A. McCarl	July 23	Aug. 6
Berkeley	Summer School of Y. W. C. A	Mary J. Corbett	July 1	Aug. 15
Los Angeles	Y. M. C. A. Summer School	R. A. Goodwell	do	Aug. 20
COLORADO.				
Estes Park	Estes Park Y. M. C. A. Summer Camp.	G. S. Bilheimer	July 21	Aug. 4
CONNECTICUT.				
Hartford	Y. M. C. A. Summer School			
DISTRICT OF COLUMBIA.				
Washington	Y. M. C. A. Vacation School	Thomas W. Walton.	June 1	Aug. 1
ILLINOIS.				
Chicago	Central Y. M. C. A. Summer School	Herbert F. Hancox	June 20	Aug. 26
Do	Division Street Y. M. C. A. Summer School.	H. H. Eckhardt	July 1	Sept. 1
Do	Wilson Avenue Y. M. C. A. Summer School.	J. F. Toedte	do	Aug. 24
MARYLAND.				
Baltimore	Association Institute of Y. M. C. A.	Maynard A. Clemens	June 16	Aug. 28
MASSACHUSETTS.				
Boston	Huntington Y. M. C. A. School	Charles H. Sampson	June 27	Sept. 9
Somerville	Y. M. C. A. Summer School	Emma G. Blanchard	July 6	Aug. 17
Springfield	do	Elmer Berry	June 27	July 30
Do	International Y. M. C. A. College	Lawrence L. Doggett	June 28	July 31

XXVIII.—Summer School Directors—Continued.

V. Y. M. C. A. AND Y. W. C. A. SUMMER SCHOOLS AND CAMPS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
MICHIGAN.				
Detroit	Detroit Technology Institute of Y. M. C. A.	Benjamin D. Edwards	June 21	Aug. 13
MISSOURI.				
Hollister	Southwestern Association School	John L. Hunter	June 24	July 8
NEW YORK.				
Brooklyn	Bedford Y. M. C. A. Vacation School	F. C. Smith	July 1	Aug. 15
Silver Bay	Eastern Association School	Fred S. Goodman	July 30	Aug. 27
NORTH CAROLINA.				
Blue Ridge	Southern Association Summer School and Conferences.	R. H. King	July 6	Aug. 31
OHIO.				
Columbus	Y. M. C. A. Summer School	C. M. Roudebush	June 20	Aug. 29
Hamilton	do		June 15	Aug. 15
PENNSYLVANIA.				
Philadelphia	Central Y. M. C. A. Summer School	Benjamin C. Crowell	June 27	Aug. 12
Scranton	Y. M. C. A. Summer School	W. L. Betts	July 6	Aug. 15
RHODE ISLAND.				
Providence	Y. M. C. A. Summer School	Harry A. Jafer John R. Ferguson	July 5	Aug. 28
TEXAS.				
Houston	Y. M. C. A. Vacation School	W. B. Davis	May 31	July 22
WASHINGTON.				
Seabeck	Pacific Northwest School	H. W. Stone	June 7	June 24
WEST VIRGINIA.				
Harpers Ferry	Chesapeake Summer School for Colored Men at Storer College.	Jesse E. Moorland	July 1	July 15
WISCONSIN.				
College Camp	Lake Geneva Summer School	Frank H. Burt	June 23	July 21
ONTARIO.				
Lake Touchiching P. O.	Canadian Training School of Y. M. C. A.	Charles W. Bishop	Aug. 3	Aug. 20

VI. SUMMER ACADEMIC CAMPS.

MAINE.				
Belfast	Navajo Camp for Boys	George R. Bouck	June 25	Sept. 5
Bridgton	Kingswood Camp	Ralph I. Underhill	July 1	Aug. 26
Do	Camp Wildwood	Rose Sommerfeld Mrs. Bella Hirsch	June 30	Aug. 31
Casco	Camp Arcadia	George L. Meylan	July 1	Aug. 28
East Union	Alford Lake Camp	Marjorie Bouve	June 30	Aug. 25
Harrison	Camp Wigwam	Abraham Mandelstam	June 30	Sept. 1
Hillside	Camp Accomac	Corinne B. Arnold	July 1	Do.
Naples	Camp Keoka	C. S. Mitchell	July 1	Sept. 1
North Belgrade	Camp Arcadia	Chester Jacob Teller	do	Do.
Do	Camp Kennebec	Samuel G. Friedman Louis M. Fleisher	do	Sept. 2
Do	Camp Merryweather	Henry Richards	July 2	Sept. 7
North Bridgton	Long Lake Lodge	Edwin V. Spooner	July 13	Do.
North Windham	Camp Aimhi	Maurice L. Hodgson	July 1	Sept. 15
Oxford	Kamp Kohut	Geo. Alexander Kohut	do	Sept. 3
Readfield	Camp Mowana	A. R. McMahon	do	Sept. 1
Rockwood	Camp Wildwood	Sumner R. Hooper	June 27	Do.
South Casco	Wawenock Camps	Mr. and Mrs. Elroy O. La Casco.	July 1	Do.
Do	White Mountain Camp	George S. Meylan	do	Aug. 28
Sunset	Camp Penobscot	Stephen B. Knowlton	June 20	Sept. 15
Washington	Medomak Camp	Hank E. Poland	July 1	Aug. 27
West Point	Norway Pines Camp	Walter A. Keyes	do	Sept. 1
Winthrop	Camp Cobbossee	R. L. Marsans	June 30	Do.

XXVIII.—Summer School Directors—Continued.

VI. SUMMER ACADEMIC CAMPS—Continued.

Location.	Summer school.	Director in 1920.	Probable date of session in 1921.	
			Opening.	Closing.
MASSACHUSETTS.				
Brewster	Sea Pines School of Personality for Girls.	Faith Bickford Addie Frances Bickford	June 28	Aug. 30
Wellfleet	Camp Chequesset	William Vinal	July 1	Aug. 26
MICHIGAN.				
Muskegon	Camp Roosevelt	F. L. Beals	July 3	Aug. 28
MONTANA.				
Alpine	Rosebud Camp School	Rosa Dell	June 15	Aug. 31
NEW HAMPSHIRE.				
Bristol	Pasquaney Nature Club	Mrs. Laura H. Hassan.	July 1	Sept. 1
Centre Harbor	Pinelands Camp	Miss M. L. Dalton The Misses Munoz	June 30	Do.
Chesham	Camp Marienfeld	S. B. Southworth	July 2	Aug. 30
Enfield	Camp Rockland	Elmer E. French	June 30	Do.
Fitzwilliam Depot	South Pond Cabins	Rollin M. Gallagher	Aug. 1	Sept. 1
Holderness	Camp Aloha	Emerson O. Kimball Edmund W. Ogden	July 13	Sept. 12
Do	Camp Wachusett	Lorin Webster	July 1	Sept. 2
Jackson	Thorn Mt. Tutoring School	George A. Bushee	July 10	Sept. 6
Jaffrey	Camp Monadnock	Frederick S. Ernst	July 1	Sept 1
North Sutton	Camp Penacook	R. B. Mattern	July 3	Aug. 28
Petersborough	The Outdoor Players	Marie Ware Laughton.	July 4	Aug. 26
Pike	Camp Serrana	Mary G. Nick	July 1	Sept. 1
Spofford	Camp Namaschaug	J. J. Griffin	June 21	Sept. 7
Wolfeboro	Camp Wolfeboro	George D. Robins	July 15	Sept. 8
Do	Camp Wyanoke	W. H. Bentley	July 1	Sept. 1
NEW YORK.				
Arey	Camp Arey	André Fontaine	do	Aug. 30
Catskill	Kyle Camp	Paul Kyle	do	Sept. 1
Flushing	Dan Beard Outdoor School	Dan Beard	do	Aug. 15
Gale	Camp Massawepie	Wm. Verbeck	July 6	Aug. 31
Kingston	Greenskill Camp	Wilfred C. Ackerly	July 1	Sept. 4
Sodus Point	Camp Fitzhugh	Aldice G. Warren	do	Aug. 31
Willsborough	Camp Pok-o-Moonshine	C. A. Robinson	do	Aug. 28
NORTH CAROLINA.				
Brevard	Camp Sapphire	W. Mc K. Fetzer	July 1	Sept. 1
Do	Camp Transylvania	John W. Moore	June 30	Aug. 25
Hendersonville	Laurel Park Camp	I. B. Brown	July 2	Aug. 27
PENNSYLVANIA.				
Matamoras	Pole Bridge Camp	Wm. E. Palmer	July 1	Aug. 30
Tyler Hill	Camp Mitchell	Wm. Mitchell	do	Sept. 1
VERMONT.				
St. Albans Bay	Kamp Kill Kare	Ralph F. Perry	July 7	Sept. 7
Thetford	Camp Hanoum	Mr. and Mrs. C. H. Farnsworth.	June 30	Sept. 1
VIRGINIA.				
Covington	Camp Jackson	R. A. Smith R. S. Owens	June 30	Aug. 26
WEST VIRGINIA.				
Terra Alta	Camp Terra Alta	T. G. Russell	do	Aug. 29
WISCONSIN.				
Madison	Camp Indianola	F. G. Mueller	July 1	Aug. 26
Oshkosh	Algonna Camp	Henry E. Polley	June 30	Aug. 25

XXIX.—Directors of Museums.[1]

Location.	Name of museum or of institution controlling it.	Director.
ALABAMA.		
Auburn	Alabama Polytechnic Institute	Charles C. Thach, president.
Birmingham	Birmingham School Museum	J.H.Phillips, superintendent.
Mobile	Y. M. C. A. Library and Museum	Leila Annspaugh, librarian.
Montgomery	Alabama Department of Archives and History	Mrs. Marie B. Owen, director.
Talladega	Talladega College	Rev. F.A. Sumner, president.
University	Alabama Museum of Natural History	Eugene Allen Smith, director.
ALASKA.		
Juneau	Alaska Historical Association	Thomas Riggs, Jr., official custodian.
Sitka	The Sheldon Jackson Museum	Presbyterian Board of Missions.
ARIZONA.		
Tucson	University of Arizona State Museum	Byron Cummings, curator.
ARKANSAS.		
Conway	Hendrix College, George H. Burr Museum of Natural History.	M. J. McHenry, curator.
Fayetteville	University of Arkansas	N. F. Drake, State geologist.
CALIFORNIA.		
Avalon, Santa Catalina Island.	Tuna Club	
Berkeley	University of California, Department of Botany.	W. A. Setchell, in charge.
Do	University of California, Department of Geology and Mineralogy.	Andrew C. Lawson, in charge.
Do	University of California, Museum of Paleontology.	J. C. Merriam, in charge.
Do	University of California, Museum of Vertebrate Zoology.	Joseph Grinnell, director.
Claremont	Pomona College Museum	W. A. Hilton, curator.
Los Angeles	Museum of History, Science, and Art	Howard Robertson, acting director.
Do	Chamber of Commerce Exhibit	Frank Wiggins, superintendent.
Do	Southern California Academy of Sciences	Holdridge O. Collins, secretary.
Do	The Southwest Museum	John Comstock, assistant director.
Do	University of Southern California	Albert B. Ulrey, curator.
Oakland	Municipal Art Gallery	Mrs. D. W. de Veer, acting curator.
Do	Oakland Public Museum	John Rowley, director.
Do	Piedmont Art Gallery	Richard L. Partington, curator.
Do	Sage Library	Anna L. Sawyer, librarian.
Pacific Grove	Pacific Grove Museum Association	Laura Duncan, curator.
Palo Alto	Leland Stanford Junior Museum	H. C. Peterson, director.
Do	Leland Stanford Junior University	F. C. Starke, curator.
Pasadena	Throop College of Technology	W. H. Clapp, in charge.
Sacramento	E. B. Crocker Art Gallery	W. F. Jackson, curator.
Santa Barbara	Museum of Comparative Oology	William Leon Dawson, director.
San Diego	San Diego Museum	Edgar L. Hewett, director.
Do	San Diego Society of Natural History	Mrs. Frank Stephens, director.
San Francisco	California Academy of Sciences	Barton W. Evermann, director.
Do	California State Mining Bureau	Flether Hamilton, curator.
Do	Memorial Museum (Golden Gate Park)	Charles E. Penez, curator.
Do	Palace of Fine Arts	John N. Laurvik, director.
Do	University of California, Anthropological Museum.	A. L. Kroeber, curator.
Santa Clara	Santa Clara University, Museum of Mineralogy and Paleontology.	Anthony Cichi, director.
COLORADO.		
Boulder	University of Colorado Museum	Junius Henderson, curator.
Colorado Springs	Colorado College Museum	Edward R. Warren, director.
Denver	Colorado State Mineral Collection	Horace F. Lunt, director.
Do	Colorado Museum of Natural History	J. D. Figgins, director.
Do	Colorado Scientific Society (Boston Block)	G. L. Cannon, curator.
Do	Denver Art Association	Reginald Poland, director.

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[1] Compiled by Harold L. Madison, secretary American Association of Museums, Park Museum, Providence, R. I.

XXIX.—DIRECTORS OF MUSEUMS—Continued.

Location.	Name of museum or of institution controlling it.	Director.
COLORADO—continued.		
Denver	East Side High School Museum	G. L. Cannon, curator.
Do	State Board of Horticulture	Mrs. Martha Shute, director.
Do	State Herbarium	Ellsworth Bethel, curator.
Do	State Historical and Natural History Society	Jerome C. Smiley, curator.
Do	Colorado State Museum	Isaac A. Abbot, custodian.
Fort Collins	State Agriculture Museum	W. L. Burnett, curator.
Golden	Colorado School of Mines, Mineralogical Museum.	H. B. Patton, director.
CONNECTICUT.		
Fairview	Birdcraft Museum	Mrs. M. O. Wright, director.
Greenwich	The Bruce Museum	Edward F. Bigelow, curator.
Hartford	Connecticut Historical Society	A. C. Bates, secretary and librarian.
Do	Theological Seminary	Charles S. Thayer, curator.
Do	Trinity College, Boardman Hall of Natural History.	Frederic W. Carpenter, director.
Do	Wadsworth Atheneum and Morgan Memorial	Frank Butler Gay, director.
Litchfield	Litchfield Historical Society	Mrs. Emily N. Vanderpool, curator.
Meriden	Meriden Scientific Association	David Gibbs, president.
Middletown	Middlesex County Historical Society	Rev. A.W. Hazen, president.
Do	Wesleyan University	William North Rice, director.
New Britain	New Britain Institute	Anna G. Rockwell, librarian.
New Haven	New Haven Colony Historical Society	Frederick Bostwick, curator.
Do	Yale University, the Eaton Herbarium	Alexander W. Evans, curator.
Do	Yale University, Peabody Museum of Natural History:	
	Zoological Collection	Wesley R. Coe, curator.
	Mineralogical Collection	Edward S. Dana, curator.
	Anthropological Collection	George G. McCurdy, curator.
	Geological Collection	Charles Schuchert, curator.
	Paleontological Collection	Richard S. Lull, curator.
Do	Yale University, School of the Fine Arts	William S. Kendall, dean of musical instruments.
Do	Yale University, Steinert Collection	
New London	New London Historical Society	Ernest E. Rogers, president.
Norwich	Norwich Free Academy, Slater Memorial Museum.	Helen Marshall, curator.
Storrs	Connecticut Agricultural College	G. H. Lamson, jr., curator.
Waterbury	Mattatuck Historical Society	
DELAWARE.		
Newark	Delaware College	Henry B. Thompson.
Wilmington	Society of Natural History of Delaware	Linda Palmer-Jones, secretary.
DISTRICT OF COLUMBIA.		
Washington	Army Medical Museum	Col. Charles F. Craig, curator.
Do	Corcoran Gallery of Art	C. Powell Minnigerode, director.
Do	Georgetown University, the Coleman Museum	Francis Barnum, curator.
Do	George Washington University Medical School	Dr. W. C. Borden, dean.
Do	Library of Congress, Division of Prints	Richard A. Rice, acting chief.
Do	National Gallery of Art, Smithsonian Institution.	William H. Holmes, curator.
Do	United States National Museum	W. de C. Ravenel, administrative assistant.
FLORIDA.		
De Land	John B. Stetson University, Monroe Health Museum.	John.F. Baerecke, director.
Gainesville	University of Florida, Florida State Museum	T. Van Hyning, director.
St. Augustine	St. Augustine Institute of Science and Historical Society.	Dewitt Nebb, president.
GEORGIA.		
Atlanta	State Museum	S. W. McCallie, curator.
Oxford	Emory University	H. H. Stone, curator.
Savannah	Telfair Academy of Arts and Sciences	William Harden, custodian.
HAWAII.		
Honolulu	Bernice Pauahi Bishop Museum	Herbert E. Gregory.

XXIX.—DIRECTORS OF MUSEUMS—Continued.

Location.	Name of museum or of institution controlling it.	Director.
ILLINOIS.		
Bloomington	Illinois Wesleyan University, Powell Museum	F. E. Wood.
Do	McLean County Historical Society	L. R. Rhodes, custodian.
Carlinville	Blackburn College, Taylor Museum	
Chicago	Art Institute of Chicago	George W. Eggers, director.
Do	Chicago Academy of Sciences	Frank M. Woodruff, curator.
Do	Chicago Historical Society	Caroline M. McIlvaine, curator.
Do	Field Museum of Natural History	Frederick J. V. Skiff, director.
Do	University of Chicago, Educational Museum	Elliot R. Downing, director.
Do	University of Chicago, Haskell Oriental Museum	James Henry Breasted, director.
Do	University of Chicago, Walker Museum	T. C. Chamberlain, director.
Decatur	James Milliken University, Biological Museum	A. P. Tyler.
De Kalb	Museum of History, State Normal School	Ed. C. Page, in charge.
Elgin	Elgin Scientific Society	
Evanston	Evanston Historical Society	J. Seymour Currey, president.
Do	Northwestern University-Garrett Biblical Institute, Bennett Museum of Christian Archæology.	Charles M. Stuart, curator.
Do	Museum of Northwestern University College of Liberal Arts.	U. S. Grant, curator.
Do	Swedish Historical Society of America	
Galesburg	Knox College, Hurd Museum	B. H. Grave, curator.
Joliet	Joliet Township High School	Stanley Brown, superintendent.
Lake Forest	Lake Forest College Museum	W. C. Allee, curator.
Naperville	Northwestern College	L. M. Umbach, curator.
Rock Island	Augustana College Museum	Ira O. Nothstein.
Springfield	Illinois State Historical Library and Society	Mrs. J. P. Weber.
Do	Illinois State Museum	A. R. Crook, chief.
Sterling	Whiteside County Historical Society	W. W. Davis, secretary.
Urbana	University of Illinois, Museum of Natural History.	Frank C. Baker, curator.
Do	University of Illinois, Museum of Classical Archæology.	A. S. Pease, curator.
Do	University of Illinois, Museum of European Culture.	Neil C. Brooks, curator.
INDIANA.		
Bloomington	Indiana University of Museum of Fine Arts	Alfred M. Brooks, curator..
Crawfordsville	Wabash College, Hovey Museum	Benjamin H. Graves, curator.
Crown Point	Old Settlers and Historical Association of Lake County.	Samuel B. Woods.
Earlham	Earlham College, Joseph Moore Museum	Allen D. Hole, curator.
Franklin	Franklin College, Gorby Cabinet	Charles A. Deppe, curator.
Goshen	Elkhart County Historical Society	A. E. Weaver, custodian.
Indianapolis	Art Association of Indianapolis, John Herron Art Institute.	Harold Haven Brown, director of Museum.
Do	Indiana State Museum	Arthur Coleman, curator.
Do	University of Indianapolis–Butler College	H. L. Bruner, director.
Marion	Grant County Historical Society, Octogenarian Museum.	R. L. Whitson, director.
Newcastle	Henry County Historical Society	Mrs. S. J. Bufkin, secretary.
Noblesville	Hamilton County Historical Association	H. A. Maker, secretary-treasurer.
Notre Dame	Notre Dame University	P. J. Folk, librarian and curator.
Richmond	Earlham College, The Joseph Moore Museum	Allen David Hole, curator.
Do	Art Association of Richmond	Mrs. Ellen B. Jackson, director.
South Bend	Northern Indiana Historical Society	John A. Hibbard, secretary.
Terre Haute	Emeline Fairbanks Memorial Library	Mrs. Sallie C. Hughes, librarian.
Upland	Taylor University, Walker Museum	Prof. I. B. Peavy.
IOWA.		
Cedar Falls	Iowa State Teachers' College	Melvin F. Arey, curator.
Cedar Rapids	Coe College Museum	B. H. Bailey, curator.
Do	Iowa Masonic Library and Museum	N. R. Parvin, librarian.
Davenport	Davenport Academy of Sciences	E. K. Putnam, acting director.
Des Moines	Historical Department of Iowa	Edgar R. Harlan, curator.
Dubuque	Carnegie–Stout Free Public Library	Almira R. Wilcox, librarian.
Do	Herrmann Museum of Natural History	Richard Herrmann, director.
Fayette	Upper Iowa University	Guy West Wilson, curator.
Grinnell	Parker Museum of Natural History	H. W. Norris, curator.
Independence	Free Public Library	S. W. Geiser, director.
Iowa City	Museum of Art and Archæology	C. H. Weller, director.
Do	Ranney Library and Museum	Jane E. Roberts .
Do	State University of Iowa, Zoological Museum	C. C. Nutting, curator.
Madrid	Madrid Historical Society	C. M. Lucas, president.

XXIX.—Directors of Museums—Continued.

Location.	Name of museum or of institution controlling it.	Director.
KANSAS.		
Atchison	Midland College	D. W. Crouse, director.
Baldwin	Baker University	C. S. Parmenter, chief curator.
Emporia	College of Emporia	L. C. Wooster, curator.
Do	Kansas State Normal School	W. H. Kellar, curator.
Lawrence	University of Kansas	Frank Strong, director.
Lindsborg	Bethany College	Emil O. Deere, curator.
Manhattan	Kansas State Agricultural College, Natural History Museum.	Robert K. Nabours, curator.
Topeka	Kansas State Historical Society	Wm. E. Connelley, curator.
Do	Washburn College	Horace L. Gunthorp, director.
Salina	Kansas Wesleyan University	M. M. Stolz, curator.
KENTUCKY.		
Bowling Green	Ogden College	
Frankfort	Kentucky State Historical Society	Jennie C. Morton, regent.
Lexington	Kentucky Geological Survey	William R. Jillson, State geologist.
Do	Transylvania College	Mrs. Charles Norton, librarian.
Louisville	Louisville Free Public Library Museum	George T. Settle, librarian.
Do	Filson Club	R. C. Ballard Thruston, director.
LOUISIANA.		
Baton Rouge	Louisiana State University and Agricultural and Mechanical College.	
New Orleans	Isaac Delgado Museum of Art	C. W. Boyle, curator.
Do	Louisiana Historical Association (Memorial Hall)	J. W. Gaines, custodian.
Do	Louisiana State Museum	Robert Glenk, director.
Do	Newcomb Art School	Ellsworth Woodward, director.
MAINE.		
Augusta	Kennebec Historical Society	Power S. Mooney, secretary.
Do	Maine State Museum	Thomas A. James, curator.
Brunswick	Bowdoin College, Museum of Fine Arts	Charles Theodore Burnett, director.
Do	Bowdoin College, Museum of Biology	Manton Copeland, director.
Do	Bowdoin College, Cleaveland Cabinet	Marshall P. Cram, curator.
Lewiston	Bates College Biological Museum	F. E. Pomeroy, director.
North Bridgton	Bridgton Academy Museum	C. C. Spratt, director.
Orono	University of Maine, Museum of Natural History.	Mintin A. Chrysler, curator.
Paris	Hamlin Memorial Hall	
Portland	Maine Historical Society	Evelyn N. Gilmore, librarian.
Do	Portland Society of Art, L. D. M. Sweat Memorial Art Museum.	John Calvin Stevens, managing director.
Do	Portland Society of Natural History	Arthur H. Norton, curator.
Saco	York Institute	S. M. Hall, superintendent.
Warren	Knox Museum of the Knox Academy of Arts and Sciences	Norman W. Lermand, curator.
Waterville	Colby College	Webster Chester, director.
MARYLAND.		
Annapolis	Maryland Geological Survey	William Bullock Clark, director.
Baltimore	Goucher College	
Do	Johns Hopkins University, Museum of Oriental and Classical Archæology.	David M. Robinson, director.
Do	Maryland Academy of Sciences	Percy M. Reese, director..
Do	Maryland Institute for the Promotion of the Mechanic Arts.	C. Y. Turner, director.
Do	Peabody Institute	L. H. Dielman, executive secretary.
Do	Walters Gallery	Henry Walters, owner.
Ellicott City	Rock Hill College	Brother Fabrician, registrar.
MASSACHUSETTS.		
Amherst	Amherst College Museum	B. K. Emerson, director.
Do	Massachusetts Agricultural College	C. E. Gordon, curator.
Andover	Abbot Academy, John-Esther Art Gallery	Jane B. Carpenter, curator.
Do	Phillips Academy	Charles Peabody, director.
Beverly	Beverly Historical Society	

XXIX.—DIRECTORS OF MUSEUMS—Continued.

Location.	Name of museum or of institution controlling it.	Director.
ILLINOIS.		
Bloomington	Illinois Wesleyan University, Powell Museum	F. E. Wood.
Do	McLean County Historical Society	L. R. Rhodes, custodian.
Carlinville	Blackburn College, Taylor Museum	
Chicago	Art Institute of Chicago	George W. Eggers, director.
Do	Chicago Academy of Sciences	Frank M. Woodruff, curator.
Do	Chicago Historical Society	Caroline M. McIlvaine, curator.
Do	Field Museum of Natural History	Frederick J. V. Skiff, director.
Do	University of Chicago, Educational Museum	Elliot R. Downing, director.
Do	University of Chicago, Haskell Oriental Museum	James Henry Breasted, director.
Do	University of Chicago, Walker Museum	T. C. Chamberlain, director.
Decatur	James Milliken University, Biological Museum	A. P. Tyler.
De Kalb	Museum of History, State Normal School	Ed. C. Page, in charge.
Elgin	Elgin Scientific Society	
Evanston	Evanston Historical Society	J. Seymour Currey, president.
Do	Northwestern University-Garrett Biblical Institute, Bennett Museum of Christian Archæology.	Charles M. Stuart, curator.
Do	Museum of Northwestern University College of Liberal Arts.	U. S. Grant, curator.
Do	Swedish Historical Society of America	
Galesburg	Knox College, Hurd Museum	B. H. Grave, curator.
Joliet	Joliet Township High School	Stanley Brown, superintendent.
Lake Forest	Lake Forest College Museum	W. C. Allee, curator.
Naperville	Northwestern College	L. M. Umbach, curator.
Rock Island	Augustana College Museum	Ira O. Nothstein.
Springfield	Illinois State Historical Library and Society	Mrs. J. P. Weber.
Do	Illinois State Museum	A. R. Crook, chief.
Sterling	Whiteside County Historical Society	W. W. Davis, secretary.
Urbana	University of Illinois, Museum of Natural History.	Frank C. Baker, curator.
Do	University of Illinois, Museum of Classical Archæology.	A. S. Pease, curator.
Do	University of Illinois, Museum of European Culture.	Neil C. Brooks, curator.
INDIANA.		
Bloomington	Indiana University of Museum of Fine Arts	Alfred M. Brooks, curator..
Crawfordsville	Wabash College, Hovey Museum	Benjamin H. Graves, curator.
Crown Point	Old Settlers and Historical Association of Lake County.	Samuel B. Woods.
Earlham	Earlham College, Joseph Moore Museum	Allen D. Hole, curator.
Franklin	Franklin College, Gorby Cabinet	Charles A. Deppe, curator.
Goshen	Elkhart County Historical Society	A. E. Weaver, custodian.
Indianapolis	Art Association of Indianapolis, John Herron Art Institute.	Harold Haven Brown, director of Museum.
Do	Indiana State Museum	Arthur Coleman, curator.
Do	University of Indianapolis–Butler College	H. L. Bruner, director.
Marion	Grant County Historical Society, Octogenarian Museum.	R. L. Whitson, director.
Newcastle	Henry County Historical Society	Mrs. S. J. Bufkin, secretary.
Noblesville	Hamilton County Historical Association	H. A. Maker, secretary-treasurer.
Notre Dame	Notre Dame University	P. J. Folk, librarian and curator.
Richmond	Earlham College, The Joseph Moore Museum	Allen David Hole, curator.
Do	Art Association of Richmond	Mrs. Ellen B. Jackson, director.
South Bend	Northern Indiana Historical Society	John A. Hibbard, secretary.
Terre Haute	Emeline Fairbanks Memorial Library	Mrs. Sallie C. Hughes, librarian.
Upland	Taylor University, Walker Museum	Prof. I. B. Peavy.
IOWA.		
Cedar Falls	Iowa State Teachers' College	Melvin F. Arey, curator.
Cedar Rapids	Coe College Museum	B. H. Bailey, curator.
Do	Iowa Masonic Library and Museum	N. R. Parvin, librarian.
Davenport	Davenport Academy of Sciences	E. K. Putnam, acting director.
Des Moines	Historical Department of Iowa	Edgar R. Harlan, curator.
Dubuque	Carnegie-Stout Free Public Library	Almira R. Wilcox, librarian.
Do	Herrmann Museum of Natural History	Richard Herrmann, director.
Fayette	Upper Iowa University	Guy West Wilson, curator.
Grinnell	Parker Museum of Natural History	H. W. Norris, curator.
Independence	Free Public Library	S. W. Geiser, director.
Iowa City	Museum of Art and Archæology	C. H. Weller, director.
Do	Ranney Library and Museum	Jane E. Roberts .
Do	State University of Iowa, Zoological Museum	C. C. Nutting, curator.
Madrid	Madrid Historical Society	C. M. Lucas, president.

XXIX.—Directors of Museums—Continued.

Location.	Name of museum or of institution controlling it.	Director.
KANSAS.		
Atchison	Midland College	D. W. Crouse, director.
Baldwin	Baker University	C. S. Parmenter, chief curator.
Emporia	College of Emporia	L. C. Wooster, curator.
Do	Kansas State Normal School	W. H. Kellar, curator.
Lawrence	University of Kansas	Frank Strong, director.
Lindsborg	Bethany College	Emil O. Deere, curator.
Manhattan	Kansas State Agricultural College, Natural History Museum.	Robert K. Nabours, curator.
Topeka	Kansas State Historical Society	Wm. E. Connelley, curator.
Do	Washburn College	Horace L. Gunthorp, director.
Salina	Kansas Wesleyan University	M. M. Stolz, curator.
KENTUCKY.		
Bowling Green	Ogden College	
Frankfort	Kentucky State Historical Society	Jennie C. Morton, regent.
Lexington	Kentucky Geological Survey	William R. Jillson, State geologist.
Do	Transylvania College	Mrs. Charles Norton, librarian.
Louisville	Louisville Free Public Library Museum	George T. Settle, librarian.
Do	Filson Club	R. C. Ballard Thruston, director.
LOUISIANA.		
Baton Rouge	Louisiana State University and Agricultural and Mechanical College.	
New Orleans	Isaac Delgado Museum of Art	C. W. Boyle, curator.
Do	Louisiana Historical Association (Memorial Hall)	J. W. Gaines, custodian.
Do	Louisiana State Museum	Robert Glenk, director.
Do	Newcomb Art School	Ellsworth Woodward, director.
MAINE.		
Augusta	Kennebec Historical Society	Power S. Mooney, secretary.
Do	Maine State Museum	Thomas A. James, curator.
Brunswick	Bowdoin College, Museum of Fine Arts	Charles Theodore Burnett, director.
Do	Bowdoin College, Museum of Biology	Manton Copeland, director.
Do	Bowdoin College, Cleaveland Cabinet	Marshall P. Cram, curator.
Lewiston	Bates College Biological Museum	F. E. Pomeroy, director.
North Bridgton	Bridgton Academy Museum	C. C. Spratt, director.
Orono	University of Maine, Museum of Natural History.	Mintin A. Chrysler, curator.
Paris	Hamlin Memorial Hall	
Portland	Maine Historical Society	Evelyn N. Gilmore, librarian.
Do	Portland Society of Art, L. D. M. Sweat Memorial Art Museum.	John Calvin Stevens, managing director.
Do	Portland Society of Natural History	Arthur H. Norton, curator.
Saco	York Institute	S. M. Hall, superintendent.
Warren	Knox Museum of the Knox Academy of Arts and Sciences	Norman W. Lermand, curator.
Waterville	Colby College	Webster Chester, director.
MARYLAND.		
Annapolis	Maryland Geological Survey	William Bullock Clark, director.
Baltimore	Goucher College	
Do	Johns Hopkins University, Museum of Oriental and Classical Archæology.	David M. Robinson, director.
Do	Maryland Academy of Sciences	Percy M. Reese, director..
Do	Maryland Institute for the Promotion of the Mechanic Arts.	C. Y. Turner, director.
Do	Peabody Institute	L. H. Dielman, executive secretary.
Do	Walters Gallery	Henry Walters, owner.
Ellicott City	Rock Hill College	Brother Fabrician, registrar.
MASSACHUSETTS.		
Amherst	Amherst College Museum	B. K. Emerson, director.
Do	Massachusetts Agricultural College	C. E. Gordon, curator.
Andover	Abbot Academy, John-Esther Art Gallery	Jane B. Carpenter, curator.
Do	Phillips Academy	Charles Peabody, director.
Beverly	Beverly Historical Society	

XXIX.—Directors of Museums—Continued.

Location.	Name of museum or of institution controlling it.	Director.
MONTANA.		
Helena	Montana Historical and Miscellaneous Library	N. Y. Pemberton, librarian.
NEBRASKA.		
Agate	Cools Museum of Natural History	Harold J. Cools, owner and director.
Crete	Doane College Museum	Carl O. Carlson, director.
Hastings	Hasting's College Museum	W. J. Kent, director.
Lincoln	Nebraska State Historical Society	E. E. Blackman, curator.
Do	Nebraska State Museum	Erwin H. Barbour, curator.
Omaha	Creighton University Museum	William F. Rigge, director.
Do	Omaha Public Library and Museum	Edith Tobitt, librarian.
NEVADA.		
Reno	Nevada Historical Society	Jeanne E. Wier, secretary and curator.
NEW HAMPSHIRE.		
Concord	New Hampshire Historical Society	Otis G. Hammond, superintendent.
Hanover	Dartmouth College, Butterfield Museum	James W. Goldwait, professor of geology.
Hopkinton	New Hampshire Antiquarian Society	Sarah U. Kimbal, curator.
Keene	Keene High School	James F. Smith.
Manchester	Currier Gallery of Art	Arthur M. Heard.
Do	Manchester Historic Association	Fred W. Lamb, curator.
NEW JERSEY.		
Bridgeton	Cumberland County Historical Society	Chas. E. Sheppard, president.
Flemington	Hunterdon County Historical Society	Hiram E. Deats, librarian.
Hackensack	Bergen County Historical Society (Johnson Public Library).	Mrs. Frances A. Westervelt, director.
Jersey City	Free Public Library Museum	Edmund W. Miller, librarian.
Montclair	Montclair Art Museum	Katherine Innes, curator.
Morristown	Washington Headquarters	Alfred E. Mills, president.
New Brunswick	Rutgers College, Geological Museum	J. A. Volney Lewis, curator.
Newark	New Jersey Historical Society (16 W. Park St.)	William S. Disbrow, secretary.
Do	The Newark Museum Association, The Newark Museum.	John Cotton Dana, director.
Princeton	Princeton University, Museum of Geology and Archeology.	William Libbey, director.
Do	Princeton University, The E. M. Museum of Historic Art.	Allan Marquand, director.
Salem	Salem County Historical Society	Geo. W. Price, secretary.
Trenton	New Jersey State Museum	Mrs. Kathryn B. Greywacz, acting curator.
Vineland	Vineland Historical and Antiquarian Society	Frank D. Andrews, secretary.
Woodbury	Historical Society of Gloucester County	Frank H. Stewart, president.
NEW MEXICO.		
Albuquerque	University of New Mexico Museum	David S. Hill, president.
Las Vegas	Hewett's Museum, Normal University	Frank H. H. Roberts, president.
Santa Fe	New Mexico Historical Society and Museum	L. B. Prince, president.
Do	Museum of New Mexico	P. A. F. Walter, executive secretary.
Do	Archaeological Society of New Mexico	Paul A. F. Walter, secretary.
Do	School of American Research, Museum of New Mexico.	Edgar L. Hewett, director.
NEW YORK.		
Albany	Albany Institute	I. Townsend Lansing, president.
Do	New York State Museum	John M. Clarke, director.
Alfred	Alfred University, Allen Steinheim and Museum of Natural History.	James D. Bennehoff, curator.
Amsterdam	Montgomery County Historical Society	W. Max Reid, curator.
Binghamton	Broome County Historical Society, Art Gallery and Museum.	William F. Seward, custodian.
Brooklyn	The Brooklyn Museum	William Henry Fox, director.
Do	Pratt Institute, School of Fine and Applied Art	Walter Scott Perry, director.
Do	Children's Museum (Bedford Park)	Anna B. Gallup, curator.
Do	Brooklyn Botanic Garden	C. Stuart Gager, director.

XXIX.—DIRECTORS OF MUSEUMS—Continued.

Location.	Name of museum or of institution controlling it.	Director.
NEW YORK—continued.		
Buffalo	Buffalo Fine Arts Academy	Mrs. Cornelia B. Sage Quinton, director.
Do	Buffalo Historical Society	Frank H. Severance, secretary.
Do	Buffalo Society of Natural Sciences	Henry R. Howland, treasurer.
Do	Canisius College	Henry Wolff, curator.
Canandaigua	Ontario County Historical Society	Charles F. Milliken, president.
Canton	Museum of St. Lawrence University	Grover C. Mance, curator.
Clinton	Hamilton College Museum of Natural History	Nelson C. Dale, director.
Cortland	F. W. Higgins Museum	Francis E. Whitmore, curator.
Elmira	Arnot Art Gallery	Mrs. Jeannette Murdock Diven, director.
Geneseo	Livingston County Historical Society (Geneseo Log Cabin Museum).	George S. Williams in charge.
Geneva	Hobart College	E. H. Eaton, director.
Glen Iris	Genessee Valley Museum	Caroline Bishop, curator.
Granville	Pember Library and Museum	F. T. Pember, director.
Hamilton	Colgate University Museum	Albert P. Brigham, curator.
Ithaca	Cornell University, College of Civil Engineering	Eugene E. Haskell, dean.
Do	Cornell University, Geological Museum	Henry S. Williams, director.
Do	Cornell University Museum of Classical Archæology	E. P. Andrews, curator.
Do	Cornell University, Museum of Invertebrate Zoology.	James G. Needham, director
Do	Cornell University, Museum of Vertebrate Zoology.	Hugh D. Reed, director.
Do	Cornell University, Veterinary College	Veranus A. Moore, director.
Johnstown	Johnstown Historical Society Museum	Fred. Plamondon, superintendent.
Lake George	New York State Historical Society	
Staten Island	Staten Island Institute of Arts and Sciences, Public Museum.	Charles W. Leng, director.
Newburgh	State Museum (Washington's Headquarters)	Marion B. Cook, curator.
New York City	Academy Mount St. Vincent	Sister Mary Ambrose, dean.
Do	American Museum of Natural History	F. A. Lucas, director.
Do	The American Museum and Temple of Music	Alice A. Driggs, founder.
Do	American Numismatic Society (156th St., west of Broadway).	Bauman L. Belden, director.
Do	Bronx Society of Arts and Sciences, Lorilliard Mansion (Bronx Park).	Gunther Ackerman, secretary.
Do	Columbia University, Egleston Mineralogical Museum.	Alfred J. Moses, director.
Do	Colonial Dames Society, Van Cortlandt Manor (Van Cortlandt Park).	Mrs. Hamilton Fairfax, president.
Do	Cooper Union, Museum for the Arts of Decoration.	Mrs. Eleanor G. Hewitt, director.
Do	Hispanic Society of America (156th St., west of Broadway).	Archer M. Huntington, president.
Do	The Metropolitan Museum of Art	Edward Robinson, director.
Do	Museum of the American Indian (Heye Foundation.)	George G. Heye, director.
Do	Museum of French Art	McDougall Hawkes, president.
Do	New York Botanical Garden (Bronx Park)	N. L. Britton, director in chief.
Do	The New York Historical Society (170 Central Park west).	Robert H. Kelby, secretary.
Do	New York Public Library Art Galleries and Exhibition Rooms.	Edwin H. Anderson, director.
Do	New York University	Elmer E. Brown, LL. D., chancellor.
Do	Washington Headquarters Association (Jumel Mansion).	Mrs. Samuel T. Kramer, president.
Niagara	Niagara University	Very Rev. Wm. F. Likly, C. M., president.
Poughkeepsie	Vassar College, Natural History Museum	A. L. Treadwell, curator.
Rochester	Bevier Memorial, Mechanics' Institute	Royal B. Farnum, superintendent.
Do	Memorial Art Gallery	George L. Herdle, director.
Do	Municipal Museum	Edward D. Putnam, curator.
Do	Rochester Historical Society	E. D. Putnam, curator.
Do	University of Rochester, Geological Museum	H. L. Fairchild.
Do	University of Rochester, Zoological Museum	Chas. Wright Dodge, curator.
Do	Ward's Natural Science Establishment	Frank A. Ward, president.
Schenectady	Schenectady County Historical Society	Ella Stickles, curator.
Do	Union Coll, Natural History Museum	James H. Stoller, curator.
Schoharie	Schoharie County Historical Society	C. P. Throop, president.

XXIX.—DIRECTORS OF MUSEUMS—Continued.

Location.	Name of museum or of institution controlling it.	Director.
NEW YORK—continued.		
Skaneateles	Skaneateles Library Association, Barrow Art Gallery.	Lydia A. Cobane, librarian and president.
Southampton, Long Island.	Southampton Art Museum	Samuel L. Parrish, director.
Syracuse	Onondaga Historical Association (311 Montgomery St.).	Charles W. Annible, custodian.
Do	Syracuse Museum of Fine Arts (Syracuse Public Library Building).	Fernando A. Carter, director.
Do	Syracuse University Biological Museum	Charles W. Hargitt, curator.
Troy	Rensselaer Polytechnic Institute	John M. Clarke, director.
Utica	Oneida Historical Society	Geo. Fenton, librarian and curator.
Waterloo	Waterloo Library and Historical Society	Lulu M. Clark, librarian.
West Point	U. S. Military Academy, Ordnance Museum	Charles Hines, in charge.
NORTH CAROLINA.		
Concord	Scotia Seminary	
Davidson	Davidson College Museum	
Durham	Trinity College	James J. Wolfe, director.
Do	Trinity College Historical Society	William K. Boyd.
Raleigh	North Carolina Hall of History	Fred A. Olds, director.
Do	North Carolina State Museum	H. H. Brimley, curator.
Tryon	Green Museum	
Do	Polk County Museum	Mrs. George E. Morton.
NORTH DAKOTA.		
Agricultural College	Agricultural College	J.H.Shepperd, vice director.
Bismarck	State Historical Society Museum	Melvin R. Gilmore, curator.
Fargo	North Dakota Art Association	Mrs. Maie Douglas Rindlaub, director.
University	University of North Dakota Museum	E. J. Babcock, director.
OHIO.		
Berea	Baldwin-Wallace College, Herman Herzer Museum.	W. N. Speckmann, director.
Cincinnati	Cincinnati Museum	J. H. Gest, director.
Do	Cincinnati Society of Natural History (312 Broadway).	Lester D. Collier, director.
Do	Cuvier Press Club	Charles Dury, custodian.
Do	Lloyd Library and Museum	W. H. Aiken, curator.
Do	Ohio Mechanics Institute, Industrial Museum	John T. Faig, president.
Do	University of Cincinnati	N. M. Fenneman, chairman museum committee.
Cleveland	Case School of Applied Science	F. M. Comstock, curator.
Do	Adelbert College Laboratory Museum	F. H. Herrick, director.
Do	Museum of Comparative Anthropology and Anatomy.	Thomas W. Todd, director.
Do	Cleveland Museum of Art	Frederic Allen Whiting, director.
Do	Cleveland Museum of Natural History	Paul M. Rea, director.
Do	Western Reserve Historical Society	W. H. Cathcart, director.
Do	Western Reserve University	F. H. Herrick, director.
Columbus	Columbus Art Association, Columbus Gallery of Art.	Mrs. William McClellan Ritter, president.
Do	Ohio State Archæological and Historical Society	William C. Mills, curator.
Do	Ohio State University Geological Museum	J. F. Carman, curator.
Dayton	Dayton Public Library and Museum	C. L. Sullivan, custodian.
Delaware	Ohio Wesleyan University	Lewis G. Westgate, curator.
Fremont	Sandusky County Pioneer and Historical Association.	Basil Meeks, secretary.
Greenville	Museum of Carnegie Library	Charles L. Katzenberger, curator.
Hiram	Hiram College	George H. Colton, curator.
Norwalk	Firelands Historical Society	J. G. Gibbs, curator.
Oberlin	Oberlin College, Geological and Geographical Museum.	Geo. D. Hubbard, curator.
Do	Oberlin College, Dudley P. Allan Memorial Art Museum.	Clarence Ward, director.
Do	Oberlin College, Zoological and anthropological Museum.	Lynds Jones, curator.
Springfield	Clark County Historical Society	Elizabeth Josephine Smart, secretary.
Tiffin	Heidelberg University	M. E. Kleckner, curator.
Toledo	Toledo Museum of Art	George W. Stevens, director.
Yellow Springs	Antioch College	William M. Dawson, acting president.
Youngstown	Butler Art Institute	Joseph G. Butler, jr., president.

XXIX.—Directors of Museums—Continued.

Location.	Name of museum or of institution controlling it.	Director.
OKLAHOMA.		
Bacone	Bacone College	Benjamin Week.
Oklahoma	Oklahoma Historical Society	W. P. Campbell, custodian in charge.
OREGON.		
Corvallis	Oregon Agricultural College	A. B. Cordley, director.
Eugene	University of Oregon, Condon Geological Museum.	Warren D. Smith, curator.
Portland	Oregon Historical Society	George H. Himes, curator.
Do	Portland Art Association, Museum of Art	Anna Belle Crocker, curator.
Do	Portland Free Museum	C. F. Wiegand, curator.
PENNSYLVANIA.		
Allentown	Lehigh County Historical Society	Charles R. Roberts, secretary.
Do	Muhlenberg College	J. A. W. Haas.
Bethlehem	Lehigh University, Geological Museum	Benj. L. Miller.
Bradford	McKean County Historical Society	Mrs. Ada Cable.
Bryn Mawr	Bryn Mawr College	C. A. Reeds, director.
Doylestown	Bucks County Historical Society	H. C. Mercer, president.
Easton	Lafayette College	John H. McCrackin.
Erie	Erie Public Museum	Mrs. Katharine Brown Blake, curator.
Germantown	Site and Relic Society of Germantown	Horace M. Lippincott.
Gettysburg	Pennsylvania College	E. S. Breidenbaugh, curator.
Harrisburg	Historical Society of Dauphin County	Mrs. L. A. Perry.
Do	Pennsylvania State Museum	Thomas Lynch Montgomery, director.
Haverford	Haverford College Museum	Henry S. Pratt, director.
Lebanon	Lebanon County Historical Society	Charles D. Weinick.
Meadville	Allegheny College	Chester A. Darling, curator.
Meyerstown	Albright College	J. P. Sotber, curator.
New Brighton	Merrick Free Art Gallery, Museum, and Library.	Frank A. Merrick, director.
Nazareth	Moravian Historical Society Museum	Wm. H. Vogler, secretary.
Norristown	Historical Society of Montgomery County	Frances M. Fox, curator.
Do	Regar Museum of Natural History	H. Severn Regar, curator.
Philadelphia	Academy of Natural Sciences	John Cadwalader, president.
Do	Boy Scouts' Museum	E. U. Goodman, executive.
Do	Drexel Institute Museum	J. P. Ryder, librarian.
Do	Independence Hall and National Museum	Wilfred Jordan, curator.
Do	Library and Museum of the Grand Lodge of F. and A. M. of Pennsylvania.	J. E. B. Buckinham, librarian and curator.
Do	Numismatic and Antiquarian Society of Philadelphia, The Numismatic Collection.	F. D. Langenheim, curator.
Do	Pennsylvania Academy of the Fine Arts	John F. Lewis, president.
Do	Pennsylvania Museum (Memorial Hall, Fairmount Park).	Langdon Warner, director.
Do	The Philadelphia Commercial Museum (34th and Spruce Sts.).	W. P. Wilson, director.
Do	Presbyterian Historical Society, Museum and Gallery (Witherspoon Building).	Joseph B. Turner, general secretary.
Do	School of Industrial Art	Howard F. Stratton, director.
Do	United States Mint, Numismatic Collection	T. L. Comparette, curator.
Do	University of Pennsylvania, The University Museum.	G. B. Gordon, director.
Do	University of Pennsylvania, Wistar Institute of Anatomy and Biology.	Milton J. Greenman, director.
Do	W. P. Wilstach Callection (Memorial Hall, Fairmount Park).	E. A. Shunk, custodian.
Do	Wagner Free Institute of Science	John G. Rothermel, director.
Do	Wister Institute of Anatomy	Milton J. Greenman, director.
Do	Zoological Society of Philadelphia, Pathological Museum.	Herbert Fox, curator.
Pittsburgh	Carnegie Institute, Department of Fine Arts	John W. Beatty, director.
Do	Carnegie Museum, Department of Carnegie Institute.	W. J. Holland, director.
Pottsville	Historical Society of Schuylkill County	C. V. Unger, librarian.
Reading	Historical Society of Berks County	Charles R. Scholl, president.
Do	Reading Public Museum	Levi W. Mengel, director.
Scranton	Everhart Museum of Natural History, Science, and Art.	R. N. Davis, curator.
State College	Pennsylvania State College, School of Mines Museum.	E. S. Moore, dean.
Swarthmore	Swarthmore College	Spencer Trotter, director.
Titusville	Drake Museum	E. C. Bell, secretary.
Uniontown	Fayette County Historical Society	James Hannen, custodian.
Valley Forge	Valley Forge Museum of American History	Rev. W. Herbert Burk, curator.
Warren	Warren Academy of Sciences, Randall Museum.	Edward Lindsey, director.

XXIX.—DIRECTORS OF MUSEUMS—Continued.

Location.	Name of museum or of institution controlling it.	Director.
PENNSYLVANIA—contd.		
Washington	Washington and Jefferson College	Samuel C. Black, president.
Do	Washington County Historical Society	George B. Montgomery, secretary.
West Chester	Chester County Historical Society	Gilbert Cope, secretary.
Do	West Chester State Normal School Museum	George M. Phillips, principal.
Wilkes-Barre	Wyoming Historical and Geological Society	Christopher Wren, librarian.
Williamsport	The James V. Brown Library and Lycoming Historical Society.	O. R. Howard Thomson, librarian.
York	Historical Society of York County	George R. Prowell, curator.
RHODE ISLAND.		
Newport	Newport Historical Society	Lloyd M. Mayer, librarian.
Providence	Annmary Brown Memorial	Margaret B. Stillwell, curator
Do	Brown University:	
	Archeology	Dr. John Shapley, curator.
	Herbarium	Carroll W. Dodge, curator.
Do	Park Museum (Roger Williams Park)	Harold L. Madison, curator.
Do	Rhode Island Historical Society	Howard M. Chapin, librarian.
Do	Rhode Island School of Design	L. Earle Rowe, director.
Warren	Warren Antiquarian Society	Rev. Joseph Hutcheson, president.
SOUTH CAROLINA.		
Charleston	Carolina Art Association	John F. Ficken, acting president.
Do	Charleston Museum	Laura M. Bragg, director.
Do	Daughters of the Confederacy, Charleston Chapter.	Martha B. Washington, president.
Clemson College	Clemson College, Natural History Museum	F. H. H. Calhoun, curator.
Clinton	Thornwell Orphanage Museum	L. Ross Lynn, president.
Columbia	University of South Carolina	A. C. Moore.
Greenville	Furman University Museum	George A. Buist, curator.
Newberry	Newberry College, Sifley Museum	
Spartanburg	Wofford College	D. A. Du Pre, director.
SOUTH DAKOTA.		
Pierre	South Dakota State Historical Museum	Doane Robinson, director.
Rapid City	South Dakota School of Mines	Cleophas C. O'Harra, director and president.
Vermillion	University of South Dakota, State Geological Museum.	Freeman Ward, curator and State geologist.
TENNESSEE.		
Clarksville	Southwestern Presbyterian University	
Knoxville	University of Tennessee, Geological Museum	C. H. Gordon, director.
Lebanon	Cumberland University	Kate A. Hinds, director.
Memphis	Cossitt Library Museum Association, Cossitt Library.	Lida Speed, custodian.
Nashville	Tennessee Historical Society	John H. De Witt, president.
Do	Vanderbilt University	L. C. Glenn, director.
Do	Walden University, Walden Museum	Mrs. H. H. Oneal, director.
TEXAS.		
Austin	Elizabeth Ney Museum	Emma Burleson, custodian.
Do	University of Texas, Museum of Economic Geology.	J. A. Udden, director.
Dallas	Dallas Art Association	J. B. Martin, custodian.
Fort Worth	Fort Worth Museum of Art (Carnegie Library)	Mrs. Charles Scheuber, secretary.
Houston	Houston Museum	C. L. Brock, director.
Do	Houston Art League (Scantan Building)	Mrs. O. L. Norsworth [Norsworthy], corresponding secretary.
San Antonio	Scientific Society of San Antonio	Edward Heusinger secretary.
Waco	Baylor University	John Kern Strecker, jr., curator.

XXIX.—DIRECTORS OF MUSEUMS—Continued.

Location.	Name of museum or of institution controlling it.	Director.
UTAH.		
Salt Lake City	Utah Art Institute	J. Leo Fairbanks, president.
Do	University of Utah Museum	F. J. Pack and Levi E. Young, curators.
VERMONT.		
Burlington	University of Vermont	G. H. Perkins, curator.
Middlebury	Middlebury College, Museum of Natural History.	Owen W. Mills, director.
Montpelier	Vermont Historical Society	Dorman B. E. Kent, librarian.
Do	Vermont State Museum	George H. Perkins, curator.
St. Johnsbury	The Fairbanks Museum of Natural Science	Mabel A. Shields, curator.
Westfield	Hitchcock Memorial Museum	E. H. Hitchcock, curator.
VIRGINIA.		
Blacksburg	Virginia Polytechnic Institute	Ellison A. Smyth, jr., director.
Charlottesville	University of Virginia, Lewis Brooks Museum	Thomas L. Watson, director.
Emory	Emory and Henry College	
Lexington	Washington and Lee University	H. D. Campbell, director.
Richmond	Confederate Museum (White House of the Confederacy).	Susie B. Harrison, house regent.
Do	State Museum of Agriculture	G. W. Koiner, commissioner of agriculture.
Do	R. E. Lee Camp, No. 1, Confederate Veterans	A. S. Baird, acting commandant.
Do	Richmond College Museum	Garnet Ryland, curator pro tem.
Do	The Valentine Museum	E. V. Valentine, president.
WASHINGTON.		
Pullman	State College of Washington	W. T. Shaw, curator.
Seattle	University of Washington, State Museum	F. S. Hall, director.
Do	Seattle Fine Arts Society	E. L. Grondahl, president.
Spokane	Spokane City Museum	Prof. Bonser, in charge.
Tacoma	Ferry Museum	W. A. Bonney, curator.
WISCONSIN.		
Appleton	Lawrence College Museum	Rufus Mather Bagg, curator.
Baraboo	Sauk County Historical Society	H. E. Cole, president.
Beloit	Beloit College, Logan Museum	Geo. L. Collie, curator.
Do	Beloit College Geological and Zoological Museum.	
Darlington	Lafayette County Historical Society	P. H. Conley, president.
La Crosse	La Crosse Normal School	Albert H. Sanford, custodian.
Madison	G. A. R. Memorial Hall	Hosea Rood, custodian.
Do	State Historical Museum of Wisconsin	Charles E. Brown, chief.
Do	University of Wisconsin	
Milton	Milton College Museum	A. R. Crandall, director.
Milwaukee	Milwaukee Downer College, Greene Memorial Museum.	Alice L. Thomas, curator.
Do	Layton Art Gallery	George Raab, curator.
Do	Public Museum of the City of Milwaukee	Henry L. Ward, director.
Do	Concordia College	A. E. Bergmann, curator.
Do	Milwaukee Art Institute	Dudley C. Warner, director.
Do	Milwaukee State Normal School	Grant Cook, curator.
Milwaukee (South)	South Milwaukee Museum	Mrs. Ellen F. Butterfield, president.
New London	New London Public Museum	C. F. Carr, curator.
Platteville	State Mining School	R. E. Davis, director.
Ripon	Ripon College	Frank M. Erickson, dean.
St. Francis	St. Francis Seminary, Salzmann Museum	William Metzdorf, director.
WYOMING.		
Laramie	University of Wyoming	S. H. Knight, curator.
Yellowstone National Park.	National Park Service Museum	M. P. Skinner, in charge.

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES.

Location.	Name of library.	Librarian.	Number bound volumes.
ALABAMA.			
Alabama City	Gardner Nichols Library	Frank Stewart	1,500
Anniston	Carnegie Library	Anne Van Ness Blanchet	6,400
Bessemer	do	Mrs. W. T. Warlick	4,000
Birmingham	Public Library	Lloyd W. Josselyn	72,497
Decatur	Carnegie Library	Louise Leadingham	4,500
Ensley	Public Library	M. G. Messer, acting	5,869
Eufaula	Carnegie Library	Mrs. Willa E. Barron	3,000
Fairhope	Public Library	L. J. Newcomb Comings	5,000
Florence	Southern Library Association Library.	Mrs. G. H. Smith	2,800
Gadsden	Public Library	Lena Martin	6,510
Huntsville	Carnegie Library	Mrs. J. L. Darwin	5,500
Mobile	Association Public Library	Leila E. Aunspaugh	22,000
Do	Public Library	Mrs. Lewis W. Harris	6,500
Montgomery	Carnegie Library	Laura M. Elmore	20,000
Do	Department of Archives and History Library.	Mary R. Mullen	100,000
Do	State and Supreme Court Library	J. M. Riggs	49,781
Selma	Carnegie Library	Bettie Keith	7,702
Talladega	Public Library	Mrs. Marie Fechet Kilburn	10,395
Troy	Carnegie Library	Evelyn Somerville	4,500
Tuscumbia	Helen Keller Library	Mrs. E. P. Rand	3,644
Union Springs	Public Library	Mollie Norman	2,960
ARIZONA.			
Bisbee	Copper Queen Library	Miss Kate A. Goodrich	10,000
Douglas	Public Library	Mrs. Kate Goodrich	6,000
Flagstaff	do	Mrs. A. O. Jones	3,400
Globe	Old Dominion Library	Dayton W. Ennes	10,000
Phoenix	Public Library	Maude L. Hiatt	20,851
Do	State Library	Con P. Cronin	150,000
Prescott	Public Library	Mrs. Florence G. Emerson	5,000
Tucson	Carnegie Free Library	Mrs. Mary Breathitt	20,000
ARKANSAS.			
Fayetteville	Public Library	Lila G. Rollston	3,800
Fort Smith	Carnegie City Library	Ethel B. Kellar	8,396
Little Rock	Public Library	Beatrice Prall	31,354
Mena	do	Mrs. Ida H. Robbins	2,250
Pine Bluff	do	Mrs. C. W. Bishop	8,000
Subiaco	New Subiaco Abbey Library	Rev. George Binkert	12,000
CALIFORNIA.			
Alameda	Free Library	Mrs. Marcella H. Krauth	54,047
Alhambra	Public Library	Mrs. Theodora R. Brewitt	22,000
Bakersfield	Beale Memorial Free Public Library.	Sarah E. Bedinger	34,197
Do	Kern County Free Library	Mrs. Julia G. Babcock	80,000
Berkeley	Public Library	C. B. Joeckel	78,000
Chico	do	Laura A. Sawyers	8,488
Colton	do	Mrs. Anna E. Spragins	9,462
Colusa	do	Belle Crane	5,600
Corona	do	Helen L. Coffin	9,672
Coronado	do	Gabrielle Morton	7,662
Covina	do	Mrs. Henrietta M. Faulder	9,211
El Centro	Imperial County Free Library	Mrs. Thomas Beeman	24,341
Do	Public Library	Agnes F. Ferris	10,397
Eureka	Free Library	Henry A. Kendal	12,457
Do	Humboldt County Free Library	Ida M. Reagan	29,766
Exeter	Carnegie Library	Mrs. A. O. Woodworth	2,200
Fairfield	Solano County Free Library	Clara B. Dills	2,500
Fresno	County Free Library	Sarah E. McCardle	161,284
Grass Valley	Public Library	Frances Doom	5,229
Hanford	Free Public Library	Mildred E. Schaer	8,184
Do	Kings County Free Library	Eleanore Kyle	45,784
Hayward	Free Library	Elizabeth Creelman	5,849
Hemet	Free Public Library	Mrs. Allison Aylesworth	4,231
Independence	Inyo County Free Library	Anne Margrave	12,341
Long Beach	Public Library	Zaidee Brown	59,269
Los Angeles	Los Angeles County Free Library	Celia Gleason	249,866
Do	Public Library	Everett R. Perry	386,857
Los Gatos	do	Caroline Bailey	8,835
Madera	Madera County Free Library	Mary E. Glock	33,404
Martinez	Contra Costa County Free Library	Mrs. Alice G. Whitbeck	62,426
Marysville	City Library	Mary E. Subers	10,000
Merced	Merced County Free Library	Winifred H. Bigley	37,547
Modesto	Stanislaus County Free Library	Bessie B. Silverthorn	29,583

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
CALIFORNIA—contd.			
Monrovia	Public Library	Anne L. Crews	9,677
Napa	Goodman Public Library	Minnie C. Shreve	14,015
National City	Public Library	Mary Ellen Galvin	6,867
Nevada City	Free Public Library	Annie James	6,000
Oakland	Free Library	Charles S. Greene	135,832
Do	Alameda County Library	Mary J. Barmby	52,728
Oceanside	Public Library	H. D. Brodie	8,359
Ontario	do	Miss K. A. Monroe	11,113
Orange	Free Public Library	Clara C. Field	9,159
Oroville	Butte County Free Library	Essae M. Culver	29,557
Oxnard	Public Library	Ethel Carroll	11,517
Pacific Grove	do	Mrs. Nellie L. Snyder	10,238
Palo Alto	do	Frances D. Patterson	14,848
Pasadena	do	Jeannette Drake	74,001
Petaluma	do	Sara Frances Cassiday	12,042
Pomona	do	Sarah M. Jacobus	42,992
Red Bluff	Herbert Kraft Free Library	Alice Gardiner	5,621
Redlands	A. K. Smiley Public Library	Elizabeth Lowry	35,000
Richmond	Public Library	Norah McNeill	28,500
Riverside	do	Joseph F. Daniels	74,271
Sacramento	City and County Library	Lauren W. Ripley	110,000
Do	State Library	Milton J. Ferguson	326,300
Salinas	Monterey County Free Library	Anne Hadden	32,500
San Bernardino	Public Library	May Coddington	20,663
Do	San Bernardino County Free Library	Caroline S. Waters	45,542
San Diego	Public Library	Althea H. Warren	78,386
Do	San Diego County Free Library	Jennie Herrman	52,420
San Francisco	Public Library	Robert Rea	237,314
San Jose	Free Public Library	Charles F. Woods	26,794
Do	Santa Clara County Free Library	Stella Huntingdon	47,993
San Luis Obispo	Free Public Library	Mrs. E. L. Kellogg	13,580
San Mateo	Public Library	Inez M. Crawford	12,836
San Rafael	do	May Cooper	12,068
Santa Ana	Free Public Library	Jeanette E. McFadden	21,000
Santa Barbara	do	Mrs. Frances B. Linn	65,188
Santa Cruz	Public Library	Minerva H. Waterman	38,148
Santa Monica	do	Elfie A. Mosse	30,500
Santa Rosa	Free Public Library	Margaret A. Barnett	28,681
Sierra Madre	Public Library	Minnie M. Wolff	8,204
South Pasadena	do	Mrs. Nellie E. Keith	17,000
Stockton	Free Public Library	Hattie M. Mann	83,323
Tulare	do	Mrs. Rosa D. Reardon	8,300
Vallejo	Public Library	L. Gertrude Doyle	14,701
Ventura	do	Florence Vandever	6,080
Visalia	Free Library	Mrs. M. J. McEwen	6,979
Do	Tulare County Free Library	Mrs. Bessie H. Twaddle	53,251
Watsonville	Carnegie Public Library	Belle M. Jenkins	10,985
Whittier	Public Library	Jessie Harris	14,733
Willows	Glenn County Free Library	Maude Middleton	13,243
Woodland	Yolo County Free Library	Eleanor Hitt	42,487
Yreka	Carnegie Library	Miss N. Dowling	2,393
Do	Siskiyou County Free Library	Hazel E. Askey	29,772
COLORADO.			
Alamosa	Carnegie Library	Mrs. Bertha E. Roberts	4,025
Boulder	Public Library	Lena R. Fenton	10,832
Canon City	do	Katherine Sartor	7,650
Colorado Springs	do	Lucy W. Baker	33,008
Delta	do	Anna Nutter	5,168
Denver	do	Chalmers Hadley	212,753
Do	State Library	Mary C. C. Bradford	55,000
Durango	Public Library	Sadie K. Sullivan	10,230
Eaton	do	Edith L. Coffman	4,500
Evergreen	do	Julia B. Douglas	3,300
Florence	do	Jessie M. Ludwick	3,000
Fort Collins	do	Elfreda Stebbins	14,270
Fort Morgan	Carnegie Public Library	Mrs. Estella M. McCutcheon	5,000
Grand Junction	do	Camille Wallace	8,000
Greeley	Public Library	Elma A. Wilson	14,780
Idaho Springs	Carnegie Public Library	Mrs. Margaret Robins	4,811
La Junta	Woodruff Memorial Library	Fannie P. Shank	20,500
Lamar	Carnegie Library	Josephine Silver	4,500
Leadville	Public Library	Ruth M. Miller	7,500
Littleton	do	Velma Haskin	5,040
Longmont	do	Genevieve Dorsett	6,690
Loveland	Carnegie Library	Mrs. Anna Duffield	5,450

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
COLORADO—continued.			
Manitou	Carnegie Library	Clotilde Reichmuth	4,000
Montrose	do	Mrs. Homer Price	2,600
Ouray	Walsh Public Library	Mrs. Mary L. Davis	9,224
Pueblo	McClelland Public Library	Mary L. Strang	35,000
Rocky Ford	Public Library	Mary L. Weaver	5,210
Salida	do	Mrs. H. I. Cook	6,678
Sterling	do	Katherine Marvin	4,000
Trinidad	do	Andrew J. Floyd	20,916
CONNECTICUT.			
Ansonia	Public Library	Anne G. Richardson	25,000
Branford	Blackstone Memorial Library	Charles N. Baxter	34,473
Bridgeport	Public Library	Henry N. Sanborn	109,164
Bristol	do	Charles L. Wooding	39,000
Canaan	Douglas Library	Mrs. Nellie A. Preston	6,000
Cheshire	Public Library	Mary E. Baldwin	7,861
Colchester	Cragin Memorial Library	Mrs. Charles Beebe	6,500
Columbia	Saxton B. Little Free Library	Lillian W. Rice	7,108
Cornwall	Library Association	Emily E. Marsh	5,000
Danbury	Danbury Library	Mary P. Wiggin	26,465
Danielson	Free Public Library	E. R. Warren	12,554
Darien	Free Library Association	Clara Scofield	7,496
Derby	Derby Neck Library	Mary A. Hurley	18,365
Do	Public Library	Emma E. Lessey	22,510
Durham Center	Durham Public Library	Mrs. Albert L. Hall	6,794
East Hartford	Public Library	Jessie W. Hayden	10,700
Ellington	Hall Memorial Library	Alice E. Pinney	7,000
Fairfield	Memorial Library	Florence J. Burr	9,370
Farmington	Village Library	Helen H. Scorth	12,000
Greenwich	Greenwich Library	Ella M. Brush	12,196
Groton	Bill Memorial Library	Abby M. Clarke	7,600
Hartford	Case Memorial Library	Charles S. Thayer	114,000
Do	Public Library	Caroline M. Hewins	143,000
Do	State Library	George S. Godard	250,000
Litchfield	Wolcott and Litchfield Circulating Library.	Katharine Baldwin	15,224
Lyme	Phoebe Griffin Noyes Library	Bessie Connolly	8,786
Madison	E. C. Scranton Memorial Library	Evelyn Meriwether	11,282
Meriden	Curtis Memorial Library	Corinne A. Deshon	24,830
Middlefield	Levi E. Coe Public Library	Alice Watrous	7,000
Middletown	Russell Library	Edna H. Wilder	20,000
Milford	Taylor Library	Howard C. Meserve	14,335
Moodus	East Haddam Public Library	Mrs. Charles H. Rogers	8,250
Mystic	Mystic and Noank Library	Genevra E. Ricker	7,450
Naugatuck	Howard Whittemore Memorial Library.	E. M. Goodyear	15,232
New Britain	New Britain Institute	Anna G. Rockwell	73,000
New Canaan	New Canaan Library	Olive L. Reamy	9,006
New Haven	Free Public Library	Willis K. Stetson	146,337
New London	Public Library	Frederick W. Edgerton	40,001
New Milford	do	Elizabeth H. Noble	12,267
Newtown	Beach Memorial Library	Abbie L. Peck	5,000
Norfolk	Norfolk Library	Mary C. Seymour	21,625
Northfield	Gilbert Library	Wallace Humiston	5,500
North Granby	Frederick H. Cossitt Library	Helen M. Shaw	9,729
Norwalk	Public Library	Dotha Stone Pinneo	17,000
Norwich	Otis Library	Imogene A. Cash	40,000
Do	Peck Library	Helen Marshall	18,000
Old Saybrook	Acton Library	Anna D. Sheffield	8,000
Pomfret	Pomfret Library	M .L. Harvey	7,600
Portland	Buck Library	Frances P. Robinson	7,215
Putnam	Free Public Library	Emma J. Kinney	8,112
Ridgefield	Ridgefield Library	Jennie Smith	10,890
Rockville	Public Library	Edith M. Peck	14,405
Salisbury	Scoville Memorial Library	Charlotte B. Norton	12,265
Seymour	Public Library	Elizabeth M. Lovering	8,719
Sharon	Hotchkiss Memorial Library	Mary C. Mackey	8,506
Shelton	Plumb Memorial Library	Jessamine Ward	18,413
Simsbury	Free Library	Julia E. Pattison	14,138
South Manchester	do	Louise L. Bartlett	13,966
South Norwalk	Public Library	Mrs. Agnes E. Blanchard	13,896
Southington	do	Elizabeth T. Williams	7,000
Southport	Pequot Library	Helen M. Bradley	43,237
Stafford Springs	Stafford Public Library	Mabel G. Meyers	7,100
Stamford	Ferguson Library	Alice M. Colt	37,541
Stonington	Free Library	Mrs. K. Hahn	7,728
Stratford	Library Association	Frances B. Russell	19,354

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
CONNECTICUT—contd.			
Suffield	Kent Memorial Library	Madeline H. Spencer	20,091
Thomaston	Public Library	Mrs. Clara Florian	8,000
Thompsonville	Enfield Public Library	Elizabeth McRossie	9,284
Torrington	Torrington Library	Kate W. Stanford, acting	15,000
Uncasville	Raymond Library	Lucy P. Scholfield	6,909
Wallingford	Public Library	Minnie E. Gedney	14,000
Washington	Gunn Memorial Library	Fanny P. Brown	6,000
Waterbury	Silas Bronson Library	Helen Sperry	115,000
Watertown	Library Association	Jennie M. Smith	10,009
Westport	Public Library	Mrs. Edith V. Sherwood	10,000
Wethersfield	do	Belle Brigham	7,500
Willimantic	Dunham Hall Library	Mrs. Hattie B. Gates	6,700
Do	Public Library	Mrs. W. D. Terry	10,039
Winsted	Beardsley Library	Dorothy Whiting	14,298
DELAWARE.			
Dover	State Library	Earle D. Willey	90,060
New Castle	New Castle Library	Kate Lambson	6,000
Odessa	Corbit Library	Helen W. Sparks	7,600
Wilmington	Wilmington Institute Free Library	Arthur L. Bailey	99,774
DISTRICT OF COLUMBIA.			
Washington	Carnegie Endowment for International Peace.	M. Alice Matthews	13,000
Do	Library of Congress	Herbert Putnam	2,710,556
Do	Pan American Union (Columbus Memorial Library).	Charles E. Babcock	45,000
Do	Peabody Library	Eva Nelson Gilbert	9,000
Do	Public Library	George F. Bowerman	223,516
Do	U. S. Department of Agriculture	Claribel R. Barnett	155,000
Do	Weather Bureau	C. Fitzhugh Talman	39,000
Do	U. S. Department of Commerce	Anne G. Cross	109,000
Do	Bureau of Fisheries	Rose M. MacDonald	29,000
Do	Bureau of Standards	A. Fanti	19,479
Do	Coast and Geodetic Survey	William A. Masker, jr	10,000
	U. S. Department of the Interior:		
Do	Bureau of Education	John D. Wolcott	175,000
Do	Bureau of Mines	Mrs. Edith Spofford	18,000
Do	Geological Survey	Julia L. V. McCord	150,000
Do	Patent Office	H. H. Brogan	80,090
Do	U. S. Department of Justice	George Kearney	55,000
Do	U. S. Department of Labor	Laura A. Thompson	75,000
Do	U. S. Department of the Navy		49,436
Do	Naval Observatory	William D. Horigan	30,608
Do	U. S. Department of State, Bureau of Rolls and Library.	John A. Tonner	85,000
Do	U. S. Department of the Treasury	Emma M. V. Triepel	9,991
Do	Bureau of Public Health Service	Margaret Doonan	8,000
Do	Office of Solicitor of the Treasury	James S. Maddux	7,000
	U. S. Department of War:		
Do	Army War College	Nannie C. Barndollar	150,000
Do	Engineer School Library	H. E. Haferkorn	60,000
Do	Surgeon General's Office	Robert E. Noble	239,033
Do	U. S. House of Representatives	John Kimball Parish	25,000
Do	U. S. Interstate Commerce Commission.	Leroy S. Boyd	15,000
Do	U. S. Public Documents Library	Sarah Ambler	270,000
Do	U. S. Senate Library	Edward C. Goodwin	250,000
Do	U. S. Smithsonian Institution	Paul Brockett	300,000
Do	Bureau of American Ethnology	Ella Leary	23,391
Do	U. S. Soldiers' Home Library	G. V. Evans	15,102
FLORIDA.			
Bartow	Public Library	Samuel S. Green	5,410
Clearwater	do	Constance Chase	4,627
Deland	do	Gertrude F. Mann	5,000
Jacksonville	do	Joseph F. Marron	52,866
Ocala	do	Louise Gamsby	6,675
St. Augustine	Free Public Library	Elizabeth Monk	9,200
St. Petersburg	Public Library	Emma M. Williams	6,756
Sarasota	Sarasota Library	Janet Ashby	2,600
Tampa	Public Library	Helen V. Stelle	14,000
West Tampa	Free Public Library	Rita I. Castillo	8,989

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
GEORGIA.			
Americus	Carnegie Library	Virginia Gunn	4,826
Atlanta	do	Tommie Dora Barker	75,000
Do	State Library	Mrs. Maud B. Cobb	76,650
Columbus	Public Library	Mrs. C. L. Gordy	15,884
Cordele	Carnegie Library	Louise O. Bercaw	5,872
Dublin	Public Library	Lily Hightower	4,300
Fitzgerald	do	Louisa Smith	4,350
Griffin	Hawkes Free Children's Library	Mrs. Mary E. Longdon	2,500
Macon	Price Free Library	Minnie F. Rice	7,000
Marietta	Clarke Library Association	Mabel C. Cortelyou	7,000
Montezuma	Carnegie Library	Mrs. Nettie Wilson	6,050
Newman	do	Katherine Powel	8,000
Rome	Public Library	Helen Eastman	7,000
Savannah	do	C. Seymour Thompson	25,000
Thomasville	do	Mary H. Hansell	6,000
Valdosta	Carnegie Library	Evie Allison	5,576
Washington	Mary Willis Library	Mrs. Willingham Wood	10,000
IDAHO.			
American Falls	Public Library	Della Reed	3,600
Boise	Carnegie Public Library	Ruth Cowgill	24,500
Do	Idaho Free Traveling Library	Margaret S. Roberts	24,545
Do	State Law Library	Mrs. Stella B. Balderstone	35,000
Caldwell	Free Public Library	Clara A. Ricketts	6,857
Cœur d'Alene	Public Library	Helen G. Norton	5,000
Idaho Falls	do	Marion Orr	3,100
Lewiston	Carnegie Library	Margaret G. Guyer	11,000
Moscow	Public Library	Etta B. McBryde	5,000
Pocatello	Carnegie Public Library	Edith Grant	4,848
Twin Falls	Public Library	Jessie Fraser	5,500
Wallace	do	Mrs. Addie R. Carpenter	6,000
Weiser	do	Olive Lacey	2,598
ILLINOIS.			
Alton	Jennie D. Hayner Library Association.	Harriet C. Dolbee	15,768
Aurora	Public Library	James Shaw	40,000
Batavia	do	Cassie W. Stephens	10,500
Belleville	do	Bella Steuernagel	35,121
Belvidere	Ida Public Library	Elizabeth Ballard	12,947
Bloomington	Withers Public Library	Nellie E. Parham	30,000
Blue Island	Public Library	Louise Denton	8,729
Cairo	do	Mrs. L. L. Powell	23,000
Cambridge	Township Public Library	Bertha Stoughton	8,223
Canton	Parlin Public Library	Mrs. Josephine H. Resor	11,670
Carthage	Free Public Library	Mrs. Elizabeth E. Pennock	7,875
Centralia	Public Library	Celia M. Miles	7,815
Champaign	do	Ethel G. Kratz	27,193
Charleston	Carnegie Library	Margaret A. Gramesly	9,400
Chicago	John Crerar Library	Clement W. Andrews	433,000
Do	Municipal Reference Library	Frederick Rex	53,423
Do	Newberry Library	George B. Utley	391,288
Do	Public Library	Carl B. Roden	1,015,000
Chicago Heights	do	Mrs. Pearle Burkholder	11,573
Chillicothe	Chillicothe Township Free Public Library.	Gladys E. Carroll	3,700
Clinton	Vespasian Warner Public Library	Lillian Kent	13,834
Danville	Public Library	Josephine E. Durham	36,361
Decatur	Free Public Library	Mrs. Alice G. Evans	43,816
De Kalb	Haish Library	Josephine M. Jandell	24,028
Dixon	Public Library	Mary F. Wynn	19,650
Earlville	do	Fanny M. Burlingame	7,296
East St. Louis	do	J. Lyon Woodruff	32,000
Edwardsville	Free Public Library	Sarah Coventry	4,000
Elgin	Gail Borden Public Library	Katherine L. Abbott	53,000
Evanston	Public Library	Ida F. Wright	65,926
Fairbury	Dominy Memorial Library	Mildred McCormack	6,139
Freeport	Public Library	Ruth P. Hughes	43,000
Galena	do	Ava E. Hurst	9,644
Galesburg	do	Anna F. Hoover	52,528
Geneseo	do	Ella L. Sawyer	13,000
Geneva	do	Gertrude E. Aiken	7,600
Gilman	Douglas Township Library	Frances Perkins	4,745
Griggsville	Public Library	Mary Gibbs	4,000
Harvard	Delos F. Diggins Library	Ida L. Gehrig	6,707
Harvey	Public Library	Sarah Daniels	4,539

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
ILLINOIS—continued.			
Highland Park	Public Library	Margaret Ridlon	12,936
Hinsdale	do	Mrs. Ella F. Ruth	8,319
Hoopeston	do	Elizabeth Greene	10,190
Jacksonville	do	Lydia M. Barrette	25,387
Joliet	do	Mrs. Rena M. Barickman	50,000
Kankakee	do	Mildred Hesse	13,137
Kewanee	do	Harriet P. Turner	18,000
Knoxville	do	Mrs. Charity A. Penn	4,239
La Grange	Free Public Library	Louise E. DeWitt	9,000
Lake Forest	Public Library	Frances E. Kemp	17,500
La Salle	do	Kathryne G. Coleman	15,000
Lincoln	do	Ida M. Webster	18,000
Macomb	Free Public Library	Mahala Phelps	13,240
Marion	Carnegie Library	Marie Mysch	4,912
Mattoon	Public Library	Blanche Gray	10 888
Maywood	do	Lottie N. Ingram	8,907
Mendota	Graves Public Library	Sadie E. Wilcox	7,750
Minonk	Filger Library	Gertrude P. Shipp	5,050
Moline	Public Library	Minnie Kohler	27,927
Monticello	Allerton Public Library	Lena Bragg	7,945
Morrison	Odell Public Library	Anna E. Corcoran	6,365
Naperville	Nichols Library	Mary B. Egermann	6,104
Oak Park	Public Library	Helen A. Bagley	36,557
Olney	Carnegie Library	Cora Belle Morris	13,997
Onarga	Free Public Library	Miss N. M. Baker	5,743
Ottawa	Reddick's Public Library	Vera J. Snook	17,265
Pana	Public Library	Mrs. Nellie C. Russell	8,144
Paris	do	Leota Price	9,111
Paxton	Carnegie Library	Emma Meharry	8,533
Pekin	Public Library	Anna M. Smith	12,305
Peoria	do	S. P. Prowse	126,470
Pittsfield	do	Helen S. Shadel	5,800
Plano	Little Rock Township Public Library	Mrs. Maude E. Henning	8,853
Polo	Buffalo Township Public Library	Edith C. McCoy	6,000
Pontiac	Public Library	Nell Thornton	10,000
Princeton	Matson Public Library	Agnes M. Robinson	10,598
Quincy	Free Public Library	Margaret Ringier	43,785
Rock Island	Public Library	Ellen Gale	32,817
Rockford	do	Jane P. Hubbell	81,000
Rockton	Talcott Free Library	Mary C. Forward	6,135
Savanna	Public Library	Hattie L. Greve	6,129
Shelbyville	Free Public Library	Oma Stewardson	9,754
Spring Valley	Public Library	Margaret Woods	4,333
Springfield	Lincoln Library	Martha Wilson	78,981
Do	State Library	Mrs. Eva May Fowler	80,000
Sterling	Public Library	Sadie F. Murphy	10,400
Streator	do	Clara Hoadley, acting	22,731
Sycamore	do	Julia S. Osborne	7,367
Taylorville	do	Aline E. Emery	8,814
Urbana	Free Public Library	Ida B. Hanes	25,000
Warren	do	Mrs. R. D. Spofford	6,183
Warsaw	do	Mrs. Clara M. Mills	6,978
Watseka	Public Library	Mrs. Josephine Yount	5,000
Waukegan	do	Laura J. Perrin	9,500
Wheaton	Adams Memorial Library	Vivian Marie Reber	7,200
Wilmette	Free Public Library	Frances S. Welter	10,000
Winnetka	Public Library	Mary E. Hewes	11,747
Woodstock	do	Laura M. Wandrack	6,157
INDIANA.			
Alexandria	Public Library	Mrs. Ralph Bertsche	5,392
Anderson	Carnegie Public Library	Margaret A. Wade	16,288
Aurora	Public Library	Constance L. Wilder	6,000
Bedford	do	Minta Stone	12,000
Bloomington	do	Mrs. K. G. Paulson	7,500
Bluffton	do	Mrs. Ida R. Ashbaucher	11,628
Brazil	do	Mrs. Gerna Gunnison	11,451
Carlisle	do	Mrs. Luella B. Wagner	2,814
Carthage	Henry Henley Public Library	Mattie Clark	5,779
Columbia City	Peabody Free Library	Jessie H. Faust	12,078
Columbus	Public Library	Lenore Bonham	15,000
Connersville	do	Isabel Ball	7,339
Crawfordsville	do	Gertrude Munhall	16,636
Danville	do	Lou Robinson	7,500
Decatur	do	Annette L. Moses	7,000
Elkhart	Carnegie Library	Ella F. Corwin	31,999
Elwood	Public Library	Mrs. Ralph Donaldson	13,949

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
INDIANA—continued.			
Evansville	Public Library	Ethel Farquhar McCollough	59,855
Do	Willard Library	M. O. Flower, acting	50,000
Fort Wayne	Public Library	Margaret M. Colerick	85,604
Frankfort	do	Olive Brumbaugh	14,994
Franklin	do	Julia A. Mason	8,403
Gary	do	Louis J. Bailey	75,000
Goshen	Carnegie Public Library	Elizabeth L. Rockwell	17,300
Greencastle	do	Belle S. Hanna	12,278
Greenfield	Public Library	Vernie Baldwin	9,500
Greensburg	Carnegie Public Library	Mrs. Ida L. Ewing	7,000
Hammond	Public Library	Mrs. Jeanie L. Sawyer	25,217
Hartford City	do	Minta B. Fordney	14,561
Huntington	City Free Library	Winifred F. Ticer	33,000
Indianapolis	Public Library	Charles E. Rush	227,926
Do	State Library	Demarchus C. Brown	87,869
Jeffersonville	Township Public Library	Mrs. Isaac Palmer Caldwell	12,000
Kokomo	Carnegie Public Library	Mrs. Dana H. Sollenberger	20,000
La Fayette	Public Library	Katherine Stites	3,504
La Porte	do	Mrs. Jennie B. Jessup	26,000
Lebanon	do	Mrs. Cora O. Bynum	15,000
Linton	do	Adria D. Humphreys	4,775
Logansport	do	Alice D. Stevens	24,410
Madison	do	Nellie G. Harper	9,000
Marion	do	Daisy Springer	36,211
Michigan City	do	Amalia Aicher	20,000
Mishawaka	do	Lyndell Martling	9,040
Montpelier	do	Mary C. Hoy	8,421
Mount Vernon	Alexandrian Free Public Library	Lola Nolte	8,826
Muncie	Public Library	Mary Torrance	35,000
New Albany	do	Annette L. Clark	22,802
Peru	do	Gertrude H. Thiebaud	16,532
Portland	Carnegie Free Library	Louise Timmonds	15,000
Princeton	Public Library	Anna Embree	14,792
Rensselaer	do	Antoinette Price	11,000
Rochester	do	Grace Stingly	7,882
Seymour	do	Katherine Frazee	8,400
Shelbyville	Carnegie Public Library	Bertha Bowlby	13,933
South Bend	Public Library	Virginia M. Tutt	60,000
Terre Haute	Emeline Fairbanks Memorial Library.	Mrs. Sallie C. Hughes	62,423
Tipton	Public Library	Mrs. Sam Matthews	9,155
Union City	do	Jessie L. Kerr	6,466
Valparaiso	do	Zada M. Carr	8,932
Vincennes	do	Ella Davidson	14,000
Wabash	Carnegie Library	Effie Roberts	8,586
Warsaw	Public Library	Miriam Netter	7,526
Washington	Carnegie Public Library	Mary E. Waller	14,000
Whiting	Public Library	Louise Randall	16,500
IOWA.			
Albia	do	Mrs. Laura M. Duncan	6,191
Algona	Free Public Library	Gertrude I. Sheridan	7,837
Ames	Public Library	Kittie B. Freed	12,800
Anamosa	do	Mrs. Florence Henke	5,863
Atlantic	Carnegie Free Public Library	Mary N. Adams	7,525
Belmond	Public Library	Mrs. Annie B. Case	1,900
Boone	Ericson Public Library	Bessie Moffatt	17,143
Burlington	Free Public Library	Mrs. Cora Poor Millard	43,219
Cedar Falls	Public Library	Mary O. Stuart	8,976
Cedar Rapids	Iowa Masonic Library	Newton R. Parvin	35,000
Do	Public Library	E. Joanna Hagey	45,135
Centerville	Drake Free Public Library	Mrs. Ada Peavey	7,454
Chariton	Free Public Library	Fern Enslow	5,094
Charles City	Public Library	Belle Caldwell	12,500
Cherokee	do	Ruth Gibbons	10,000
Clarinda	do	Harriet Foster	12,000
Clinton	Free Public Library	Mary A. Egan	28,513
Corning	do	Idelle Riddile	6,370
Council Bluffs	do	Cora Hendee	36,656
Davenport	Public Library	Grace Shellenberger	60,700
Des Moines	do	Grace D. Rose	113,564
Do	State Library	Johnson Brigham	157,577
Dubuque	Carnegie Stout Library	May M. Clark	40,000
Eldora	Public Library	Miriam Brown, acting	7,800
Estherville	Free Public Library	Elizabeth Andreae	8,500
Fairfield	do	Emma L. Kirk	28,396
Fort Dodge	Public Library	Isabella C. Hopper	20,068

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
IOWA—continued.			
Fort Madison	Cattermole Memorial Library	Rebecca Hesser	10,000
Grinnell	Stewart Library	Florence M. Fisher	13,779
Hampton	Public Library	Mary E. Kingsbury	6,560
Independence	Free Public Library	Mrs. N. M. Evers	7,214
Indianola	Public Library	Mary E. McCoy	13,590
Iowa City	do	Ethel Tiffy	23,000
Jefferson	do	Nellie Hopper	6,143
Keokuk	do	Nannie P. Fulton	27,384
Le Mars	do	Mae Smith	7,200
Malvern	do	Amy G. Deardorff	3,050
Manchester	Carnegie Library	Margaret Lindsay	12,000
Maquoketa	Free Public Library	Ida M. Simpson	10,625
Marion	Carnegie Library	Lenna M. Huffman	6,345
Marshalltown	Public Library	Callie Wielder	16,000
Mason City	do	Mrs. Bertha S. Baird	22,000
Mount Pleasant	Free Public Library	Elena E. Budde	16,556
Muscatine	P. M. Musser Public Library	Ellen G. Stocker	17,119
Nevada	Public Library	Alice Lewis	7,600
Newton	Free Public Library	Elizabeth McB. King	12,000
Onawa	Public Library	Helen E. Allen	12,000
Osage	Sage Public Library	Rena Gray	7,258
Oskaloosa	Free Public Library	Mary B. Lee	20,829
Ottumwa	Public Library	May B. Ditch	37,000
Pella	Carnegie-Viersen Library	Cornelia Rhynsburger	7,529
Perry	Free Public Library	Flora B. Bailey	9,223
Shenandoah	Public Library	Berdena Jay	8,850
Sioux City	Free Public Library	Clarence W. Sumner	60,000
Tipton	Carnegie Public Library	Helen M. Morse	8,406
Vinton	Public Library	Elizabeth F. Williams	10,327
Washington	Jane A. Chilcote Library	Eva G. Denny	10,222
Waterloo	Public Library	Maria C. Brace	36,086
Webster City	Kendall Young Library	E. D. Burgess	14,173
Winterset	Public Library	Mrs. Blanche E. Howard	10,092
KANSAS.			
Abilene	Free Public Library	Lida Romig	9,002
Anthony	Free Public Library and Reading Room.	Lora Orr	8,645
Arkansas City	Public Library	Mrs. Mary E. Ranney	8,000
Atchison	do	Jessie G. Isbell	11,979
Burlington	Carnegie Free Public Library	Mrs. Della Hall	7,000
Chanute	Public Library	Myrtle Johnson	12,000
Coffeyville	do	Elizabeth J. Hull	9,526
Concordia	Free Public Library	Mrs. Ella R. Vaughn	7,616
Emporia	Free Library	Nora Daniel	17,675
Fort Scott	Public Library	Mary L. Barlow	7,000
Great Bend	do	Bina Deighton	6,000
Hiawatha	Morrill Free Public Library	Rebecca D. Kisser	16,000
Hutchinson	Public Library	Ida Day	12,000
Independence	do	Anna M. Gemmell	10,777
Junction City	George Smith Public Library	Mary H. Barker	13,663
Kansas City	Public Library	Sara J. Greenman	32,000
Lawrence	Free Public Library	Lillian J. Constant	16,324
Leavenworth	do	Elsie Evans	27,940
Manhattan	Carnegie Free Public Library	Mary Cornelia Lee	9,000
Newton	Free Library	Lydia A. McGaughey	8,058
Oswego	Free Public Library	Mrs. Anna Nafes	3,500
Ottawa	Carnegie Free Library	Alice C. Graham	9,600
Paola	Free Public Library	Issie B. Potts	11,264
Parsons	Public Library	Mrs. Belle Curry	12,000
Peabody	do	Mrs. J. E. Mullikin	10,000
Pittsburg	do	Mrs. Theresa G. Randolph	17,500
Salina	Free Public Library	Mrs. Delia E. Brown	20,000
Topeka	do	Caroline Medlicott	35,000
Do	State Library	Winfield Freeman	135,000
Washington	Public Library	Laura A. Miller	3,000
Wichita	City Library	Julius Lucht	28,642
KENTUCKY.			
Covington	Public Library	Anne M. Spears	26,017
Danville	Danville Library	Elizabeth A. Tunis	4,600
Frankfort	State Library	Frank K. Kavanaugh	116,626
Harrodsburg	Public Library	Margaret Thomas	6,500
Henderson	do	Susan S. Towles	9,739
Hickman	Carnegie Library	J. M. Calvin	4,000
Knottsville	Free Library	Fannie Payne	15,000
Lawrenceburg	Carnegie Library	Miss Russell Chambers	3,332

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
KENTUCKY—continued.			
Lexington	Public Library	Florence Dillard	34,783
Louisville	Free Public Library	George T. Settle	218,957
Maysville	Public Library	Mary E. Richeson	9,700
Mount Sterling	Athenæum Library	Mrs. Marcia B. Hoffman	5,225
Newport	Public Library	Henrietta J. Litzendorff	13,664
Nicholasville	Withers Memorial Library	Mrs. W. A. Porter	3,750
Owensboro	Carnegie Free Public Library	Susannah Bishop	9,634
Paducah	Carnegie Public Library	Harriett Boswell	19,072
Paris	Public Library	Macey W. Fithian	7,641
Pippapass	Free Library	Bonnie Franklin	11,853
Somerset	Public Library	Mrs. Wynona McDaniels	6,900
Versailles	Logan-Helm Memorial Library	Mrs. M. W. Edwards	2,607
LOUISIANA.			
Alexandria	Public Library	Lillie J. Thornton	5,100
Baton Rouge	do	Mae Barrow	3,389
Jennings	Carnegie Library	Mrs. Minna L. Roberts	3,600
Lake Charles	Carnegie Public Library	Mrs. C. M. Dees	6,500
New Orleans	Howard Memorial Library	William Beer	59,000
Do	Public Library	Henry M. Gill	168,498
Do	State Library	Alice M. Magee	60,000
MAINE.			
Alfred	Parsons Memorial Library	Mary C. Emerson	8,225
Andover	Public Library	Mabel E. French	7,136
Auburn	do	Georgiana Lunt	28,750
Augusta	Lithgow Library and Reading Room	Julia M. Clapp	13,000
Do	State Library	Henry E. Dunnack	130,000
Bangor	Public Library	Elmar T. Boyd	77,871
Bar Harbor	Jesup Memorial Library	I. M. Suminsbey	13,000
Bath	Patten Free Library	Margaret Rogers Foote	24,300
Belfast	Free Library	Annie Leonora Barr	20,000
Biddeford	Public Library	Emma Hatch	19,000
Brunswick	Curtis Memorial Library	Mary G. Gilman	16,800
Calais	Free Library and Reading Room	Bertha E. Boyd	12,000
Camden	Public Library	Mrs. Emma J. Hosmer	8,877
Castine	Witherle Memorial Library	Katherine Davenport	6,000
Corinna	Stewart Free Library	Mrs. Edna A. Hutchins	14,000
Cumberland Mills	Cumberland Mills Library	M. T. Goodell	7,500
Dexter	Town Library	Lizzie S. Springall	13,714
Dover	Thompson Free Library	Mary E. Averill	12,535
Eastport	Peavey Library	Nora Cummings	12,950
Eliot	William Fogg Library	M. Louise Foye	8,900
Ellsworth	City Library	Mary A. Hodgkins	7,000
Fairfield	Lawrence Public Library	Mrs. Anna R. Reed	8,988
Farmington	Cutler Memorial Library	Mrs. Flora A. Brooks	17,000
Freeport	B. H. Bartol Library	Annette H. Aldrich	5,124
Gardiner	Public Library	Mrs. B. C. Berry	15,000
Gorham	Baxter Memorial Library	Victoria A. Magnusson	10,650
Guilford	Memorial Library	Ernestine Hale	5,500
Hallowell	Hubbard Free Library	Annie F. Page	12,500
Houlton	Cary Memorial Library	Anna Barnes	13,000
Kennebunk	Public Library	Mrs. Mary R. M. Ross	12,000
Kittery	Rice Public Library	Eleanor L. Lovell	9,000
Lewiston	Public Library	Marguerite Chamberlain	25,000
National Soldiers' Home	National Soldiers' Home Library	Frank L. Phalen	17,000
New Gloucester	Public Library	Louise F. True	7,000
Norway	do	Helen H. Holmes	6,000
Old Town	do	Amy S. Wood	7,231
Orr's Island	Orr's Island Library	Lillian B. Younger	5,000
Paris	Hamlin Memorial Hall	Jeanne Hubbard	3,327
Pittsfield	Public Library	Minnie Porter	8,700
Portland	do	Alice C. Furbish	78,500
Presque Isle	Free Library	Lucinda B. Marston	6,300
Rangeley	Public Library	Emma Russell	6,575
Rockland	do	Martha S. Bartlett	17,672
Saco	Dyer Library Association	John Haley	25,080
Sanford	Public Library	Bentley Aveyard	5,700
Skowhegan	do	Mrs. Fanny J. Cabot	14,000
South Berwick	Fogg Memorial Library	Elizabeth H. Goodwin	8,529
South Paris	Paris Public Library	Mrs. Ella A. Wight	4,570
South Poland	Poland Spring Library	Frank Carlos Griffith	7,500
Thomaston	Public Library	Ella K. Gillchrest	7,781
Vinal Haven	do	Linda A. Jones	5,000
Waterville	do	Jennie M. Smith	17,000
Westbrook	Memorial Library	Jennie G. Andrews	20,000
Wilton	Free Public Library	Mary E. Eaton	3,500
Yarmouthville	Merrill Memorial Library	Ellen S. Mitchell	8,900

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of Library.	Librarian.	Number bound volumes.
MARYLAND.			
Annapolis	State Library	Mary Garnett McCarty	100,000
Baltimore	City Library	Wilbur F. Coyle	25,000
Do	Enoch Pratt Free Library	Bernard C. Steiner	381,289
Do	Peabody Institute Library	John Parker	206,131
Frederick	Frederick County Free Libraryy	Mary Newman	4,402
Hagerstown	Washington County Free Librar	Mary L. Titcomb	35,000
MASSACHUSETTS.			
Abington	Public Library	A. Brewster Vaughn	14,625
Acton	Memorial Library	Arthur F. Davis	12,875
Adams	Free Library	Mabel L. Moore	22,000
Amesbury	Public Library	Alice C. Follansbee	19,000
Amherst	do	Katherine Powell	14,850
Andover	Memorial Hall Library	Edna A. Brown	25,000
Arlington	Robbins Library	Elizabeth J. Newton	30,567
Ashburnham	Stevens' Public Library	Mrs. Evelyn L. Crandall	7,600
Ashfield	Belding Memorial Library	May G. Boice	8,400
Ashland	Public Library	Mrs. Grace S. Bragg	11,000
Athol	do	Pearl L. Mason	11,537
Attleboro	do	Mrs. Lucinda F. Spofford	22,604
Ayer	Ayer Library	Mrs. Jennie McLean	12,000
Barnstable	Sturgis Library	Elizabeth C. Nye	16,917
Barre	Town Library	Carrie E. Read	14,847
Bedford	Free Public Library	Fannie Wood	13,563
Belchertown	Clapp Memorial Library	Mrs. Cora S. Burnett	11,000
Belmont	Public Library	Lucy D. Luard	19,047
Bernardston	Cushman Library	Caroline A. Barber	13,600
Beverly	Public Library	Martha P. Smith	40,000
Billerica	Bennett Public Library Association	Emma M. Whitford	6,555
Blackstone	Free Public Library	P. F. Fitzgerald	14,000
Bolton	Public Library	Fidelia C. Newton	6,215
Boston	Boston Athenæum Library	Charles Knowles Bolton	280,681
Do	State Library	Edward H. Redstone	199,777
Do	Public Library	Charles F. D. Belden	1,197,489
Bourne	Jonathan Bourne Public Library	Jane Storms	7,000
Braintree	Thayer Public Library	Lucretia F. Hatch	19,000
Brewster	Ladies Library	Alma Rogers	7,350
Bridgewater	Public Library	Lucia L. Christian	20,154
Brimfield	do	Mary Anna Tarbell	9,000
Brockton	do	Frank H. Whitmore	82,572
Brookfield	Merrick Public Library	Claribelle F. Bailey	21,480
Brookline	Public Library	Louisa M. Hooper	100,622
Bryantville	Cobb Library	Mrs. Julia Morton	5,816
Cambridge	Public Library	T. Harrison Cummings	120,000
Canton	do		20,040
Charlton	Free Public Library	Ellen M. Robbins	6,027
Chatham	Eldredge Public Library	Edna M. Hardy	6,100
Chelmsford	Adams Library	Mrs. E. R. Clark	11,000
Chelsea	Public Library	Medora J. Simpson	22,162
Cheshire	Library Association	Emma E. Martin	7,653
Chicopee	Public Library	Anne A. Smith	46,000
Clinton	Bigelow Free Public Library	Helen A. Thissell	44,629
Cohasset	Paul Pratt Memorial Library	Sarah B. Collier	17,677
Concord	Free Public Library	Sarah R. Bartlett	8,379
Conway	Field Memorial Library	Mrs. L. M. Ralston	9,750
Cotuit	Public Library	Grace Dottridge	5,839
Cummington	Bryant Free Library	Mrs. Lottie W. Tower	9,500
Dalton	Free Public Library	Mrs. Caroline R. Flickinger	12,864
Danvers	Peabody Institute Library	Bessie P. Ropes	31,187
Dedham	Public Library	Anna P. Rolland	29,500
Dover	Town Library	Elizabeth F. Heard	7,000
Dudley	Conant Library	Leora E. Dugar	5,523
Duxbury	Free Library	Sara B. Higgins	10,500
East Bridgewater	Public Library	Lucy L. Siddall	9,510
East Douglas	Simon Fairfield Public Library	Rosalie E. Williams	6,500
East Northfield	Talcott Library	Virginia T. Smith	9,454
Easthampton	Public Library	Emma H. Parsons	16,000
Essex	T. O. H. P. Burnham Public Library	Ethelyn B. Story	6,746
Everett	Frederick E. Parlin Memorial Library.	E. H. Furst	30,000
Do	Shute Memorial Library	Pearl L. Purinton	12,184
Fairhaven	Milicent Library	Galen W. Hill	25,659
Fall River	Public Library	George W. Rankin	107,669
Falmouth	Free Public Library	Marion Eaton	12,836
Fitchburg	Public Library	George E. Nutting	62,000
Florence	Lilly Library		6,874
Framingham	Town Library	Emma L. Clarke	40,000

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
MASSACHUSETTS—con.			
Franklin	Franklin Library	Mrs. Ella G. Campbell	9,800
Gardner	Levi Heywood Memorial Library	Barbara H. Smith	18,500
Georgetown	Peabody Library	Lois P. Noyes	9,201
Gloucester	Sawyer Free Library	Rachel S. Webber	23,500
Grafton	Public Library	Nellie J. Ainsworth	15,260
Great Barrington	Mason Library	Jennie K. Thompson	17,934
Greenfield	Public Library	May Ashley	38,790
Groton	do	Emma F. Blood	14,788
Groveland	Langley-Adams	Helena M. Nickerson	6,273
Hadley	Goodwin Memorial Library	George C. Marsh	6,179
Hamilton	Public Library	Mrs. G. H. Haraden	8,000
Hanover Center	John Curtis Free Library	Bessie M. Sproul	8,000
Harvard	Public Library	Helen F. Page	9,000
Hatfield	Free Public Library	Ellen A. Waite	6,300
Haverhill	Public Library	John G. Moulton	110,000
Hingham	do	Albert L. Stephenson	16,400
Hinsdale	do	Mrs. Cora Lovell	10,000
Holbrook	do	Mable Porter	10,974
Holden	Gale Free Library	M. Addie Holden	8,360
Holliston	Public Library	Frances J. Hayes	8,271
Holyoke	do	Grank G. Willcox	56,426
Hopedale	Bancroft Memorial Library	Harriet B. Sornborger	13,869
Housatonic	Ramsdell Public Library	Lydia A. Fuller	8,000
Hubbardston	Free Public Library	Mrs. Lucy H. Clough	6,000
Hudson	Public Library	Grace M. Whittemore	12,904
Ipswich	Free Public Library	Mary B. Maine	13,290
Kingston	Frederic C. Adams Public Library	Mrs. Jennie F. McLauthlen	10,270
Lancaster	Town Library	Virginia M. Keyes	42,292
Lanesboro	Newton Memorial Library	Mrs. E. G. Loring	2,200
Lawrence	Free Public Library	William A. Walsh	76,830
Lee	Library Association	Mary Stallman	11,000
Leicester	Public Library	Mary D. Thurston	16,700
Lenox	Lenox Library	Edith O. Fitch	20,780
Leominster	Public Library	Florence E. Wheeler	36,330
Lexington	Cary Memorial Library	Marian P. Kirkland	31,399
Lincoln	Public Library	Lydia J. Chapin	10,924
Littleton	Reuben Hoar Library	Margaret E. Thacher	14,687
Lowell	City Library	Frederick A. Chase	110,000
Lunenburg	Ritter Memorial Library	L. Frances Jones	9,816
Lynn	Public Library	Clarence E. Sherman	115,000
Magnolia	Magnolia Library	Alice W. Foster	7,850
Malden	Public Library	Herbert W. Fison	75,407
Manchester	do	Jennie C. Sargent	12,000
Mansfield	do	Ida F. Hodges	8,500
Marblehead	Abbott Public Library	Mrs. Sarah E. Gregory	23,000
Marion	Library Association	Alice A. Ryder	9,984
Marlboro	Public Library	John P. McGee	30,000
Mattapoisett	Free Public Library	Grace A. Tilden	7,646
Maynard	Public Library	Mrs. Sarah F. Nyman	6,738
Medfield	do	Ethel F. Wood	5,000
Medford	do	Abby L. Sargent	57,536
Melrose	do	Carrie M. Worthen	25,000
Mendon	Taft Public Library	Mrs. Lena W. George	5,589
Merrimac	Public Library	Susanna I. Sayre	6,000
Methuen	Nevins Memorial Library	Beatrice Weibel	23,181
Middleboro	Public Library	Mary M. Eddy	24,082
Middleton	Flint Public Library	Edith L. Fletcher	8,355
Milford	Town Library	Nathaniel F. Blake	21,650
Millbury	Sutton Free Library	Mrs. Florence Freeland	4,000
Milton	Public Library	Carrie S. Allen	31,441
Monson	Horatio Lyon Memorial Library	Maud C. Sweet	14,000
Montague	Town Library	Mrs. Kate A. Hayden	7,900
Mount Hermon	Schauffler Memorial Library	Anna L. Miller	15,000
Nahant	Public Library	May W. Perkins	26,713
Nantucket	Nantucket Atheneum	Clara Parker	22,000
Natick	Morse Institute	Mira R. Partridge	30,925
Needham	Free Public Library	Grace W. Thompson	18,000
New Bedford	do	George H. Tripp	170,000
Newburyport	Public Library	John D. Parsons	57,204
Newton	Free Library	Harold T. Dougherty	108,788
North Abington	Public Library	Gertrude M. Gleason	10,000
North Adams	do	Mabel Temple	39,888
North Andover	Stevens Memorial Library	Elizabeth M. Pond	16,450
North Attleboro	Richards Memorial Library	Ada M. Perry	18,500
North Brookfield	Appleton Library	William S. Gooch	5,300
Do	Free Public Library	Katharine E. Smith	10,000
North Chelmsford	Public Library	Anna C. MacKay	8,084
North Easton	Ames Free Library	Mary L. Lamprey	21,221

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
MASSACHUSETTS—con.			
North Reading	Flint Memorial Library	Addie W. Gowing	6,567
Northampton	Forbes Library	J. L. Harrison	160,000
Northboro	Free Library	M. Evelyn Potter	15,900
Northfield	Dickinson Memorial Library	Mrs. Nellie G. Randall	9,010
Norton	Public Library	Mabel E. Roode	9,486
Norwood	Morrill Memorial Library	Jane A. Hewitt	22,720
Orange	Wheeler Memorial Library	N. Gertrude Hendrickson	16,964
Orleans	Snow Library	Mary S. Cummings	6,868
Oxford	Free Public Library	Mrs. Clara A. Fuller	12,000
Palmer	Young Men's Library	May Robinson	13,916
Peabody	Peabody Institute Library	John E. Keefe	48,978
Pepperell	Lawrence Memorial Library	Helen M. Wiley	18,700
Petersham	Memorial Library	Fannie G. Prince	9,000
Phillipston	Phillips Free Public Library	Mrs. Annie S. France	7,347
Pittsfield	Berkshire Athenæum and Museum	Harlan H. Ballard	71,000
Plymouth	Public Library	Lilian C. Kerr	16,332
Princeton	.....do	Susan A. Davis	9,000
Provincetown	.....do	Abbie C. Putnam	15,000
Quincy	Thomas Crane Public Library	Truman R. Temple	46,652
Randolph	Turner Free Library	Alice M. Belcher	27,997
Reading	Public Library	Bertha L. Brown	10,265
Revere	.....do	Harriet T. Fenno	4,500
Rockland	Memorial Library	Mrs. Lida A. Clark	12,555
Rockport	Public Library	Mabel L. Woodfall	8,387
Royalston	Phinehas S. Newton Library	Mrs. Emmaline E. Mackenzie	4,631
Salem	Public Library	Gardner M. Jones	68,749
Do	Salem Athenæum	Mrs. Alice H. Stone	29,000
Sandwich	Weston Memorial Library	Mrs. Elizabeth L. Burbank	7,000
Saugus	Free Public Library	Mrs. L. H. Taylor	15,000
Sharon	Public Library	Isadore B. Paine	7,800
Shelburne Falls	Arms Library	Mrs. S. A. Field	11,780
Sherborn	Dowse Library	Elizabeth D. Coolidge	7,551
Shirley	Public Library	Grace M. Kilburn	7,062
Shrewsbury	Free Public Library	Mabel E. Knowlton	12,973
Somerset	.....do	Flora B. Wood	3,500
Somerville	Public Library	George H. Evans	117,973
South Braintree	Thayer Public Library	Lucretia F. Hatch	17,282
South Dartmouth	Southworth Library	Theodosia P. Chase	9,000
South Hadley	Gaylord Memorial Library	Gertrude E. Gaylord	7,854
South Natick	Bacon Free Library	Mrs. Adelaide Williams	5,183
South Sudbury	Goodnow Library	Mabel Stetson Gohlke	14,040
South Weymouth	Fogg Library	Ruth N. Tower	9,908
Southboro	Fay Library	Sarah V. Stivers	14,868
Southbridge	Jacob Edwards Library	Ella E. Miersch	23,882
Spencer	Richard Sugden Library	Clarence R. Hodgdon	16,000
Springfield	City Library Association	Hiller C. Wellman	272,647
Springfield (Longmeadow).	Richard Salter Storrs Library	Mrs. Lucy A. Booth	8,160
Sterling	Public Library	Mrs. F. L. Lent	9,854
Stockbridge	Library Association	Agnes J. Goodwin	11,000
Stoneham	Public Library	Albert F. Buck	10,200
Stoughton	.....do	Amelia Clifton	15,000
Stow	Randall Memorial Library	Eleanor L. Smith	6,000
Sturbridge	Joshua Hyde Public Library	Susan L. Haynes	9,000
Sunderland	Sunderland Library	Mrs. Etta L. Robinson	5,392
Swampscott	Public Library	Sarah L. Honors	11,702
Swansea	Free Public Library	Julia R. Wellington	8,653
Taunton	Public Library	Joshua E. Crane	74,087
Templeton	Boynton Public Library	Grace E. Blodgett	10,187
Tewksbury	Public Library	Abbie M. Blaisdell	10,504
Topsfield	Town Library	Annie P. Gleason	12,831
Townsend	Public Library	Mrs. Evelyn L. Warren	7,419
Turners Falls	Carnegie Public Library	Louise S. Partenhemer	12,290
Tyngsboro	Littlefield Library	Jennie J. Bancroft	8,402
Upton	Town Library	Helen A. Fay	7,654
Uxbridge	Free Public Library	Beatrice P. Sprague	13,000
Vineyard Haven	.....do	Bessie H. Stanton	9,000
Wakefield	Beebe Town Library	H. Gertrude Lee	20,006
Walpole	Public Library	Margaret B. Forster	16,000
Waltham	.....do	Orlando C. Davis	60,000
Ware	Young Men's Library Association	Mary L. Smith	15,533
Warren	Public Library	Joseph G. Hastings	12,664
Warwick	Free Public Library	Mrs. Mary C. Cole	4,360
Watertown	.....do	Lydia W. Masters	49,352
Wayland	.....do	Margaret E. Wheeler	16,381
Webster	.....do	Mrs. Phoebe P. Kingsbury	14,000
Wellesley	Free Library	Esther C. Johnson	25,000
Wenham	Public Library	Benjamin H. Conant	7,500
West Boylston	Beaman Memorial Public Library	Annie M. Waite	10,509

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
MASSACHUSETTS—cont.			
West Bridgewater	Public Library	Mrs. Hattie E. Cary	8,500
West Brookfield	Merriam Public Library	Helen P. Shackley	10,586
West Newbury	Public Library	Sarah O. Bailey	6,089
West Springfield	do	Marion Bowler	12,075
Westboro	do	Mrs. Abbie F. Judd	18,976
Westfield	Westfield Atheneum	Harold A. Wooster	39,000
Westford	J. V. Fletcher Library	May E. Day, acting	17,034
Westhampton	Reunion Library	Gilbert I. Flint	5,778
Westminster	Forbush Memorial Library	Sadie F. Greene	9,806
Weston	Public Library	Maude M. Pennock	25,368
Weymouth	Tufts Library	Abbie L. Loud	31,258
Whitinsville	Social Library	Mary R. Clarke	14,686
Whitman	Public Library	Ellena S. Spilsted	15,000
Williamsburg	Meekins Memorial Library	Jennie L. Baker	9,000
Williamstown	Public Library	Eleanor R. Duncan	8,880
Winchendon	Beals Memorial Library	Ida L. Knight	12,360
Winchester	Public Library	Cora A. Quimby	24,750
Winthrop	do	Dorothy L. Kinney	14,734
Woburn	do	William N. Seaver	50,073
Worcester	Free Public Library	Robert K. Shaw	233,293
Do	Webster Free Public Library	Phoebe P. Kingsbury	11,255
Wrentham	Fiske Public Library	Mary A. Smith	6,755
Yarmouthport	Yarmouth Library Association	Mrs. Lydia C. Matthews	10,000
MICHIGAN.			
Adrian	Public Library	Margaret F. Jewell	27,000
Albion	do	L. Ruth French	10,000
Allegan	do	Leonora E. Porter	8,016
Alpena	do	Emily E. Oliver	7,800
Ann Arbor	do	Nellie S. Loving	26,921
Bay City	do	Isabel A. Ballou	55,062
Do	Sage Library	Molly M. Gilbert	42,000
Benton Harbor	Public Library	Theodosia Falkingham	11,391
Bessemer	do	Carrie A. Davis	2,290
Big Rapids	Phelps Free Library	Mary Morressey	9,400
Cadillac	Public Library	William F. Sanborn	17,621
Charlotte	Free Public Library	Emily B. Robb	10,331
Cheboygan	Carnegie Free Library	Amy M. Bell	8,000
Coldwater	Free Public Library	Florence M. Holmes	16,896
Detroit	Public Library	Adam Strohm	489,854
Dowagiac	do	Grace ReShore	10,600
Escanaba	Carnegie Public Library	Winifred Harvey (acting)	16,883
Fenton	A. J. Phillips Public Library	Ella M. Williams	10,018
Flint	Public Library	Ivah Whitwell (acting)	25,000
Grand Rapids	do	Samuel H. Ranck	202,231
Greenville	School and Public Library	Alice Fuller	6,200
Harbor Springs	Christian Association Library	Sarah C. Judd	6,000
Hillsdale	Mitchell Public Library	Mary Pratt	14,596
Holland	Public Library		11,849
Houghton	do	Harriet L. Allen	13,000
Howell	Carnegie Library	M. Winnifred Brown	8,774
Hudson	Public Library	Mamie E. Havens	10,210
Ionia	Hall-Fowler Memorial Library	Nina K. Preston	9,045
Iron Mountain	Carnegie Public Library	Leonore C. Carpenter	16,231
Ironwood	Carnegie Library	Florence Kronlund	12,000
Ishpeming	Carnegie Public Library	Mrs. Nellie E. Brayton	27,106
Jackson	Public Library	Earl W. Browning	45,000
Kalamazoo	do	Flora B. Roberts	55,000
Lansing	Public School Library	Mrs. E. Jennie McNeal	31,000
Do	State Library	Mary C. Spencer	300,000
Ludington	Public Library	Clara M. Hagerman	10,227
Manistee	City and School Library	Angie Messer	21,000
Marquette	Peter White Public Library	Alma A. Olson	28,468
Mendon	Public Library	N. E. Strickland	6,485
Menominee	Spies Public Library	Helena S. Lefevre	18,000
Monroe	Dorsch Memorial Library	Mrs. Jennie S. Wallace	10,682
Mount Clemens	Public Library	Agnes L. Snover	14,175
Muskegon	Hackley Public Library	Lulu F. Miller	61,868
Niles	Public Library	Orrill P. Coolidge	10,104
Painesdale	Sarah Sargent Paine Memorial Library	Amelia T. Pickett	9,167
Petoskey	Public Library	Amy Lusk	7,000
Pontiac	Ladies' Library	Agnes P. Cudworth	7,000
Port Huron	Public Library	Constance Bement	27,916
Portland	do	Edna J. Bandfield	3,700
Quincy	Free Public Library	Mary Belle Dore	5,367
Royal Oak	Township Library	Elizabeth V. Briggs	5,500
Saginaw	Butman Fish Memorial Library	Anna Benjamin	19,665
Do	East Side Public Library	Mary E. Dow	21,108
Do	Hoyt Library	Blanche D. Topping	36,911

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
MICHIGAN—continued.			
St. Joseph	Public Library	M. Bernice Tuscott	8,500
Sault Ste. Marie	Carnegie Public Library	Adah Shelly	13,914
Sturgis	Carnegie Free Public Library	Alida Patterson	7,000
Tecumseh	Public Library	Edith L. Ingersoll	1,729
Three Rivers	Free Public Library	Sue I. Silliman	18,000
Traverse City	Public Library	Alice M. Wait	15,760
Ypsilanti	Ladies' Library	Mrs. Lucy B. Loomis	11,671
MINNESOTA.			
Aitkin	Public Library	Esther L. Seavey	2,740
Albert Lea	do	Henryetta Armstrong	8,000
Alexandria	Free Public Library	Mrs. Margaret A. McCord	9,084
Anoka	Public Library	Mrs. Georgia A. Goss	6,400
Austin	Carnegie Public Library	Tayne Burgess	9,176
Bemidji	Public Library	Kathryn MacGregor	3,000
Chisholm	do		11,500
Cloquet	do	Grace E. Cameron	2,552
Crookston	Carnegie Public Library	Elizabeth Lommen	5,840
Crosby	Public Library	Rosetta Lefka	1,682
Detroit	do	Eva L. Furber	3,798
Duluth	do	Francis E. Earhart	80,425
Eveleth	do	Margaret Hickman	10,000
Fairmont	do	Minnie Bird	6,028
Faribault	do	Sarah E. LeCrone	15,500
Fergus Falls	do	Amy Lewis	8,151
Hastings	Public and School Library	Stella Telford	5,791
Hibbing	Public Library	Dorothy Hurlbert	30,864
Keewatin	do	Helen Young Prall	4,018
Little Falls	Carnegie City Library	Mrs. Jenny Lind Blanchard	6,049
Luverne	Public Library	Mrs. D. E. Halbert	5,052
Mankato	do	M. Janet Bain	20,809
Minneapolis	do	Gratia A. Countryman	359,826
Montevideo	do	Edith M. Crandall	9,520
Moorhead	do	Ethel S. McCubrey	9,725
Morris	do	Agnes Torpey	4,785
Mountain Iron	Carnegie Public Library	Stella Stebbins	5,800
Northfield	Public Library	Mary L. Southworth	6,600
Ortonville	do	Hester J. Clark	3,000
Owatonna	Free Public Library	Maud van Buren	19,000
Pipestone	Public Library	May C. Funk	7,400
Red Wing	Carnegie-Lawther Library	Grace L. Meyer	9,323
Rochester	Public Library	Edna Emerick	16,000
St. Cloud	do	Mrs. Marie E. Brick	14,020
St. Paul	do	W. Dawson Johnston	237,765
Do	State Library	Elias J. Lien	88,123
Sank Center	Bryant Library	Eva M. Davis	10,628
Stillwater	Public Library	Gertrude Glennon	18,649
Thief River Falls	Carnegie Public Library	Gena Granum	5,560
Two Harbors	Public Library	Vivadale Schultz	6,538
Virginia	do	Grace M. Stevens	22,000
Willmar	do	Amy Hanscom	4,739
Winona	Free Public Library	Jeannette A. Clark	38,427
MISSISSIPPI.			
Biloxi	King's Daughters Library	M. T. Rodenberg	3,580
Clarksdale	Carnegie Public Library	Miss Hoyland L. Wilson	7,000
Greenville	Public Library	Amanda Worthington	12,500
Jackson	State Library	Mrs. W. F. Marshall	90,000
Meridian	Public Library	Mrs. A. K. Hamm	9,000
Natches	Fisk Memorial Library	M. B. Montgomery	3,000
Vicksburg	Public Library	Mrs. Celestine W. Foster	6,320
West Point	Carnegie Library	Lucy Heard	4,330
Yazoo City	Library Association	Mrs. F. Barksdale	7,000
MISSOURI.			
Albany	Carnegie Public Library	May Erskine	4,606
Bonne Terre	Memorial Library	Frances Stevens	4,078
Carthage	Public Library	Alice R. Gladden	12,050
Hannibal	Free Public Library	Nancy C. McLachlan	14,732
Independence	do	Carrie Wallace	6,000
Jefferson City	do	Julia Andrae	10,000
Do	State Library	A. J. Menteer	66,000
Joplin	Free Public Library	Mary B. Swanwick	32,599
Kansas City	Public Library	Purd B. Wright	290,000
Louisiana	do	Elizabeth Irwin	6,323

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
MISSOURI—continued.			
Maryville	Free Public Library	Mary Grace Langan	8,063
Moberly	....do	Mrs. Bessie S. Lee	11,000
Nevada	....do	Mary E. Barr	3,750
St. Joseph	Public Library	Jesse Cunningham	85,710
St. Louis	....do	Arthur E. Bostwick	579,945
Sedalia	....do		21,597
Springfield	....do	Harriet M. Horine	18,769
Trenton	Jewett Norris Library	Cora Brennenstuhl	7,700
MONTANA.			
Anaconda	Hearst Free Library	Elizabeth L. Thomson	16,320
Big Timber	Carnegie Library	Caroline Carnes	2,200
Billings	Parmly Billings Memorial Library	Mrs. Henry E. Garber, jr	24,000
Bozeman	Free Library	Geneva Cook	13,249
Butte	Free Public Library	Gertrude Nichols	60,000
Deer Lodge	William K. Kohrs Memorial Library	Rhea M. Johnson	6,700
Dillon	Public Library	Mary L. Innes	9,000
Fort Benton	Chouteau County Free Library	Pauline Madden	15,000
Great Falls	Public Library	Louise M. Fernald	25,750
Hardin	Big Horn County Library	W. E. Fearis	3,000
Havre	Carnegie Public Library	Mrs. Mary F. Homan	4,890
Helena	Public Library	Josephine M. Haley	60,000
Do	State Law Library	Ashburn K. Barbour	33,000
Kalispell	Public Library	Harriet E. Hall	8,900
Lewiston	Carnegie Public Library	Clara M. Main	7,750
Livingston	....do	Ruth V. Steadman	7,800
Malta	Phillips County Library	Mrs. Mae White	6,184
Miles City	Carnegie Library	Mrs. Laura Zook	6,500
Missoula	County Free Library	Ruth Worden	7,000
Do	Public Library	Elizabeth Powell	20,000
Red Lodge	....do	Mrs. M. A. Smith	3,000
NEBRASKA.			
Aurora	....do	Lillian Moore	5,043
Beatrice	Free Public Library	Merlyn Abbott Anderson	12,941
Columbus	Public Library	Rosemary Riddell	6,514
David City	....do	Lillian M. Simpkins	6,500
Falls City	Lydia Brunn Wood Library	Mary Hutchings	9,348
Fremont	Public Library	Sarah E. Gosselink	12,500
Grand Island	....do	Daisy Houck	7,400
Hastings	Carnegie Library	Mrs. Ida E. Capps	9,500
Kearney	Public Library	Mary Earley O'Brian	11,000
Lincoln	City Library	Lulu Horne	48,126
Do	State Library	H. C. Lindsay	78,504
McCook	Public Library	Grace Willetts	6,897
Nebraska City	....do	Anne Stevenson	7,000
Omaha	....do	Edith Tobitt	153,000
Plattsmouth	....do	C. Olive Jones	8,363
York	....do	Ada O. Haggard	10,446
NEVADA.			
Carson City	State Library	Frank J. Pyne	91,000
Reno	Free Public Library	E. N. Damon	18,000
Tonopah	Public Library	Mrs. Addie Depew	2,834
NEW HAMPSHIRE.			
Alton	Public Library	Annie A. Wheeler	4,509
Amherst	Town Library	Jennie E. Hollbrook	6,244
Antrim	James A. Tuttle Library	Mrs. J. E. Perkins	4,000
Berlin	Free Public Library	Lottie C. Kailey	10,000
Bristol	Minot-Sleeper Library	Mrs. Mary A. Dodge	8,748
Charlestown	Silsby Free Public Library	Anna L. Webber	9,298
Claremont	Fisk Free Library	Mrs. Mary S. Ide	11,863
Colebrook	Public Library	Sarah E. Rolf	5,500
Concord	....do	Grace Blanchard	32,500
Do	State Library	Arthur H. Chase	164,662
Dover	Public Library	Caroline H. Garland	50,000
Dublin	....do	Minnie E. Leffingwell	7,170
East Derry	Taylor Library	C. Louise Bachelder	8,078
East Jaffrey	Jaffrey Public Library	Winifred M. Coolidge	8,268
Exeter	Public Library	Carrie W. Byington	21,302
Fitzwilliam	Town Library	Annie L. Colby	9,000
Franconia	Abbie Greenleaf Library	Eva M. Aldrich	5,312
Franklin	Public Library	Mrs. Barron Shirley	12,000

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
NEW HAMPSHIRE—con.			
Greenland	Weeks Library	Lillian A. Odell	6,670
Hancock	Town Library	Annie L. Putnam	7,264
Hanover	Howe Library	Etta M. Clark	9,504
Henniker	Tucker Free Library	Lucy Wilkins	6,752
Hinsdale	Public Library	Miss E. L. Brown	7,000
Hollis	Social Library	M. Louise Stratton	4,775
Hudson	Hills Memorial Library	Annabel Morgan	5,500
Keene	Public Library	Mary L. Saxton	22,374
Kingston	Nichols Memorial Library	Mrs. Nellie F. Ingalls	6,812
Laconia	Public Library	Olin S. Davis	26,400
Lancaster	do	Martha W. Brackett	11,500
Lebanon	do	Emma Morris	7,000
Lisbon	do	Nettie L. Kelsea	5,474
Littleton	do	Jennie E. Smith	13,000
Manchester	City Library	F. Mabel Winchell	87,000
Marlboro	Frost Free Library	Mabelle F. Derby	4,000
Meredith	Public Library	Mrs. Lillian Wadleigh	6,000
Milford	Free Library	Annabell C. Secombe	13,600
Nashua	Public Library	Sarah P. Barker	42,000
New Hampton	Gordon-Nash Library	Ina A. Bickford	16,000
New Ipswich	New Ipswich Library	Frances L. Nash	7,622
Newmarket	Public Library		6,857
Newport	Richards Free Library	Mrs. Charles Miller	12,000
Peterboro	Town Library	Ruby Tillinghast	19,000
Portsmouth	Public Library	Hannah G. Fernald	23,000
Rochester	do	Lillian E. Parshley	21,400
Tilton	Hall Memorial Library	Mrs. Lena C. Bishop	9,026
Wakefield	Public Library	Alice C. Milliken	7,845
Walpole	Town Library	Frances M. Sabin	11,931
Warner	Pillsbury Free Library	Mary B. Harris	12,800
Whitefield	Public Library	Mabel Aldrich	10,000
Wilton	Gregg Free Library	Bessie F. Bales	10,000
Wolfeboro	Brewster Free Library	Elizabeth Brewster	6,000
Woodsville	Free Public Library	Mrs. N. J. Chamberlin	6,500
NEW JERSEY.			
Asbury Park	Public Library	Josephine W. Porter	17,000
Atlantic City	do	Jessie Adams	42,500
Bayonne	Free Public Library	Mary G. Peters	60,000
Belleville	Public Library	Mrs. E. A. Shattuck	19,647
Barnardsville	Bernards Library Association	Clara C. Ormiston	6,000
Bloomfield	Jarvie Memorial Library	Mrs. Metta R. Ludey	21,893
Bridgeton	Bridgeton Library	Emma V. Wallen	10,000
Burlington	Burlington Library	Lydia Weston	21,000
Camden	Free Public Library	William H. Ketler	69,000
Cranford	do	May D. Bradley	7,930
Dover	do	Martha A Burnet	8,915
East Newark	East Newark Library	Thomas J. Carey	10,649
East Orange	Free Public Library	Louise G. Hinsdale	59,001
Edgewater	Free Library	Elizabeth Gillies	9,000
Elizabeth	Free Public Library	C. A. George	62,496
Englewood	do	Miss Finney	19,810
Glen Ridge	do	Margaret D. Brower	11,000
Hackensack	Johnson Public Library	Mary Boggan	24,644
Haddenfield	Free Public Library	Anna L. Cawley	8,000
Hoboken	do	Thomas F. Hatfield	85,000
Jersey City	do	Edmund W. Miller	200,052
Kearny	do	M. Belle Kilgour	13,814
Lakewood	Public Library	Katharine L. Hinsdale	8,944
Long Branch	do	Mary Clarkson	5,000
Montclair	Free Public Library	Alta M. Barker	45,230
Morristown	Morristown Library and Lyceum	Mary P. Parsons	22,000
Navesink	Library Association	Dorothy G. Norton	3,000
New Brunswick	Free Public Library	Mary N. Walker	39,960
Do	Gardner A. Sage Library	John C. Van Dyke	55,000
Newark	Free Public Library	John C. Dana	250,000
Newton	Dennis Library	A. Elizabeth Case	8,232
Nutley	Free Public Library	Irene Calvert Phillips	7,835
Orange	Free Library	Elizabeth H. Wesson	43,836
Passaic	Public Library	Edna B. Pratt	64,000
Paterson	Free Public Library	George F. Winchester	77,600
Perth Amboy	Public Library	Helen M. Grannis	16,233
Plainfield	Public Library and Reading Room	Florence M. Bowman	61,515
Princeton	Free Public Library	Agnes Miller	11,000
Rahway	Library Association	Adele W. Lupton	20,000
Riverton	Free Library	Elizabeth B. Campbell	6,000

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
NEW JERSEY—contd.			
Rockaway	Free Public Library	Etta Davey	3,800
Rutherford	do	Dorothy E. Burrows	10,179
Salem	Salem Library	Cornelia Prior	8,314
Somerville	Free Public Library	Marie Fox Wait	9,183
South Orange	do	Julia Schneider	11,085
Summit	do	Emilie Hill	17,799
Trenton	do	Howard L. Hughes	89,495
Do	State Library	Francis E. Croasdale	125,000
Vineland	Free Public Library	Minnie G. Clark	8,000
Weehawken	do	Louise I. Macpherson	18,000
West Hoboken	do	Paul M. Konert	19,540
Westfield	do	Bessie Smith	11,104
NEW MEXICO.			
Alamogordo	Public Library	Mary Darbyshire	2,040
Albuquerque	do	Mrs. H. F. Dixon	8,614
Deming	do	Mrs. Maud C. Hoffman	4,400
East Las Vegas	Carnegie Public Library	Elizabeth Cooley	8,000
Santa Fe	Public Library	Nannie Simmons	6,000
NEW YORK.			
Addison	Public Library	Charles Brewster	5,428
Albany	Free Library	Lilian Callahan	25,000
Do	State Library	James I. Wyer, jr	535,000
Do	Union Free Library	Agnes H. McCarthy	12,000
Do	Young Men's Association, Central Library.	E. Elizabeth Barker	25,408
Do	Y. M. A. Pruyn Library	Mabel McKay	15,616
Albion	Swan Library	Lillian A. Achilles	13,836
Alden	Ewell Free Library	Mary E. Patrell	6,018
Amsterdam	Free Library	Mrs. Katherine B. Cooley	22,617
Angelica	do	Mrs. Mary G. Horner	8,473
Auburn	Seymour Library	Theodora Kellogg	30,821
Bath	Davenport Library	Edna Dinwiddie	9,746
Belmont	Free Library	Ella Sortore	6,402
Binghamton	Public Library	William F. Seward	46,519
Boonville	Erwin Library	Emma Shattuck Oldfield	7,503
Bridge Hampton	Hampton Library	May T. Van Scoy	10,000
Bronxville	Public Library	Mrs. Roger M. Sherman	9,414
Brooklyn	do	Frank P. Hill	957,703
Do	Pratt Institute Free Library	Edward F. Stevens	123,696
Buffalo	Grosvenor Library	Augustus H. Shearer	141,000
Do	Public Library	Walter L. Brown	363,540
Do	Historical Society Library	Mrs. Anna A. Andrews	30,000
Cambridge	Public Library	May Carpenter	8,230
Camden	Library Association	Mrs. Mary A. Manzer	6,000
Canandaigua	Wood Library	S. N. Lee	9,001
Canastota	Public Library	Mrs. Nellie H. Willis	9,425
Canton	Free Library (Benton Memorial)	Fanny E. Wead	9,628
Catskill	Public Library	Emily F. Becker	9,414
Cazenovia	do	Elizabeth B. Needham	20,070
Chatham	do	Frances M. Samuel	12,000
Clinton	Kirkland Town Library	Ruth W. Raymond	6,905
Cohoes	City Library	Elmer E. Bell	6,300
Cooperstown	Village Club and Library	Grace E. Cockeley	6,829
Corning	Free Library	E. Pearl Wheeler	10,133
Cortland	Franklin Hatch Library	Margaret H. Force	6,356
Coxsackie	Heermance Memorial Library		9,273
Danville	Public Library	Susie M. Parker	7,800
Delhi	Free Library	H. B. Arthur	7,000
Dryden	Southworth Library	Jennie Kennedy	11,900
Dunkirk	Free Library	Carlina M. Monchow	20,000
East Hampton	do	E. C. Hedges	12,000
Ellenville	Public Library	Mrs. B. B. Demarest	8,000
Elmira	Steele Memorial Library	Mrs. Kate D. Andrew	24,000
Endicott	Free Library	Margery C. Quigley	9,360
Fredonia	Darwin R. Barker Library	Florence S. Hall	11,909
Friendship	Free Public Library	Agnes L. Jordan	6,000
Fulton	Public Library	Lucile Stanley	8,880
Geneseo	Wadsworth Library	Ethel W. Frazer	21,634
Geneva	Free Library	Margaret A. Hayes	11,260
Glen Cove	Public Library	Eugenie C. Thorne	10,000
Glens Falls	Crandall Free Library	Gertrude Ferguson	15,512
Gloversville	Free Library	Lucy Edel	33,086
Gouverneur	Reading Room Association	Mollie L. Parker	6,478
Greene	Moore Memorial Library	Mary Summers	6,920

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
NEW YORK—continued.			
Greenport	Greenport Library	Elizabeth Deale	3,350
Greenwich	Free Library	Robert L. Shanks	4,000
Haverstraw	King's Daughters' Public Library	Mary E. Van Orden	8,151
Herkimer	Free Library	Edith M. Sheaf	13,000
Homer	Phillips Free Library	Mary A. Ferguson	8,070
Hornell	Public Library	Helen G. Thacher	21,553
Hudson	Hendrick Hudson Chapter Free Library.	Maud A. Rice	7,557
Huntington	Library Association	Mary F. Gaines	11,000
Ilion	Free Public Library	Nellie Mae Cheney	18,117
Irvington-on-Hudson	Guiteau Library	Emma Knodel	10,378
Ithaca	Cornell Library Association	E. T. Turner	30,000
Jamestown	James Prendergast Free Library	Lucia T. Henderson	27,500
Johnson City	Johnson City Library	Jane Stiles	8,929
Johnstown	Public Library	Katherine M. Seaman	16,186
Kingston	City Library	Marion Herbert	9,800
Little Falls	Public Library	Mabel E. Richards	12,113
Lockport	do	Claire N. Atwater	12,200
Lyons	Civic Club Free Library	Mrs. Ella B. Leonard	3,505
Marathon	Peck Memorial Library	J. W. Livingston	6,800
Middletown	Middletown Library	Mary K. Van Keuren	19,064
Millbrook	Free Library		6,704
Moravia	Powers Library	Elizabeth Y. Fulton	9,105
Mount Vernon	Public Library	Frances D. Thomson	41,742
New Rochelle	do	Mary E. Huntington	45,403
New York	do	Edwin H. Anderson	1,117,565
New York (Jamaica P. O.).	Queens Borough Public Library	John C. Atwater	279,111
Newark	Free Public Library	Louise E. Van Duser	11,253
Newburgh	Free Library	Lillian O. Estabrook	40,381
Niagara Falls	Public Library	Bertha M. Cudebec	25,000
North Tonawanda	do	Mrs. Mary T. Warren	17,584
Norwich	Guernsey Memorial Library	N. Louise Ruckteshler	15,000
Nyack	Nyack Library	Helen L. Powell	11,712
Ogdensburg	Public Library	Mary K. Hasbrouck	15,000
Olean	do	Maud D. Brooks	15,625
Oneonta	do	Mrs. Elizabeth W. Blackall	20,000
Ossining	do	Katharine C. Gorton	16,000
Oswego	City Library	Robert S. Kelsey	10,000
Owego	Coburn Free Library	Nano Loring	11,800
Oxford	Memorial Library	Lillian J. Emerson	7,834
Oyster Bay	Free Library	Luie P. Sammis	7,549
Palmyra	King's Daughters' Free Library	Harriet B. Corson	5,920
Patchogue	Public Library	Mrs. Alma D. Custead	7,533
Peekskill	Field Library	Ella F. Fowler	11,405
Penn Yan	Public Library	Henrietta H. Kimball	10,231
Plattsburg	do	Ernest S. Hall	18,045
Port Henry	Sherman Free Library	Anna L. Walton	9,000
Port Jervis	Free Library	Margaret B. Marsh	21,394
Potsdam	Public Library and Reading Room	Mrs. Sadie A. Bixby	8,323
Poughkeepsie	Adriance Memorial Library	John C. Sickley	59,039
Rensselaer	Bath-on-Hudson Public Library	Alice Ashton	3,885
Rochester	Public Library	William F. Yust	117,483
Do	Reynolds Library	Anne R. Collins	86,009
Rockville Center	Public Library	Mrs. A. H. Decker	7,052
Rome	Jervis Library Association	Eugenie Stevens	19,502
Rye	Free Reading Room	Marcia Dalphin	8,001
Sag Harbor	John Jermain Memorial Library	Mrs. Olive P. Young	13,093
Salem	Bancroft Public Library	Frances F. Leighton	13,000
Saranac Lake	Free Library	Mrs. W. H. Hubert	8,041
Saugerties	Public Library	Janet H. Vrooman	10,650
Schenectady	do	Henry Glen	46,152
Seneca Falls	Mynderse Library	Ellen F. Wickes	5,382
Shelter Island	Public Library	Dorothy B. Payne	7,353
Sherburne	do	Adelaide E. Harrington	8,162
Sherman	Minerva Free Library	Florence E. Hawley	7,300
Sidney	Public Library	Mrs. Mitta C. Smith	7,770
Skaneateles	Library Association	Lydia H. Cobane	16,815
Solvay	Public Library	Cornelia Mertens	9,539
Southampton	Rogers Memorial Library	Julia W. Foster	12,821
Springville	Public Library	Lucy A. Bensley	10,308
Syracuse	do	Paul M. Paine	150,463
Tarrytown	Yonng Men's Lyceum Library	Flora C. Millard	15,539
Tonawanda	Public Library	Mrs. Ada M. Rork	7,704
Troy	do	Mary L. Davis	52,931
Utica	do	Caroline M. Underhill	100,918

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
NEW YORK—continued.			
Walden	Josephine-Louise Public Library	Ethel S. Leeming	3,235
Walton	W. B. Ogden Free Library	Mrs. Flora Bassett	6,990
Warrensburg	Richards Library	Mary S. Crandall	4,762
Warsaw	Public Library	Helen M. Cameron	8,203
Waterloo	Library and Historical Society	Lula M. Clark	7,401
Watertown	Roswell P. Flower Memorial Library	Samuel A. Hayt	32,330
Wellsville	David A. Howe Public Library	Fannie E. Crittenden	14,041
Westfield	Patterson Library	Emma W. Piehl	18,659
White Plains	Public Library	Clara F. Hopper	27,200
Wyoming	Free Library	Vivian F. Arnold	7,090
Yonkers	Public Library	Helen M. Blodgett	50,000
NORTH CAROLINA.			
Asheville	Pack Memorial Library	Ann Talbot Erwin	10,000
Charlotte	Carnegie Library	Anne Pierce	10,396
Durham	Public Library	Mrs. A. F. Griggs	7,000
Gastonia	.....do	Lottie E. Blake	3,100
Greensboro	.....do	Bettie D. Caldwell	17,000
Ledger	Good Will Free Library	A. W. Willis	10,000
Raleigh	Olivia Raney Library	Mrs. J. S. Atkinson	16,550
Do	State Library	Carrie L. Broughton	45,000
Wilmington	Public Library	Frances L. Jewett	9,135
Winston-Salem	Carnegie Public Library	Pamela Bynum	11,056
NORTH DAKOTA.			
Bismarck	State Law Library	Joseph Coughlan	20,000
Devils Lake	Carnegie Library	Marie E. O'Brien	5,348
Dickinson	Public Library	Zenka I. Trinka	5,671
Fargo	.....do	Winnie Bucklin	15,758
Grand Forks	.....do	L. Hester Camp	8,881
Jamestown	.....do	Alice M. Paddock	9,000
Minot	Free Public Library	Margaret Greene	7,574
OHIO.			
Akron	Public Library	Maude Herndon	40,000
Alliance	Carnegie Free Library	Dorothea Doane	12,500
Ashtabula	Public Library	Ethel J. MacDowell	11,908
Bellefontaine	Free Public Library	Laura O. Morgan	8,080
Bellevue	Carnegie-Stahl Public Library	Emma C. Sutter	10,000
Bowling Green	Wood County Public Library	Grace Haylor	4,280
Bryan	Free Public Library	Julia F. Struble	6,614
Bucyrus	Public Library	Grace J. Fuller	14,130
Cadiz	.....do	Mrs. Addie Garvin	7,000
Cambridge	.....do	Martha G. Robins	8,500
Canton	Public Library Association	Mary P. Martin	28,146
Carey	Dorcas Carey Public Library	Carolyn Newhard	6,035
Chillicothe	Public Library	Burton E. Stevenson	34,000
Cincinnati	.....do	N. D. C. Hodges	581,016
Circleville	.....do	Mary E. Wilder	18,500
Cleveland	.....do	Linda A. Eastman	624,941
Clyde	.....do	Chella Hutchinson	7,000
Columbus	.....do	John J. Pugh	120,000
Do	State Library	J. H. Newman	200,000
Conneaut	Carnegie Public Library	Marie T. Brown	12,000
Coshocton	Public Library	Clara B. Olney	14,600
Cuyahoga Falls	Taylor Memorial Library	Mary L. Graham	6,000
Dayton	Public Library	Electra C. Doren	114,955
Defiance	.....do	Mrs. A. K. Macy	18,051
Delaware	City Library	Mrs. Margaret Lahr	12,510
East Liverpool	Carnegie Public Library	Mary H. Hall	12,217
Elyria	Elyria Library	Grace M. Petersen	30,000
Findlay	Public Library	Mary B. Morrison	14,857
Fremont	Birchard Library	Elsie F. Pack	14,600
Galion	Public Library	Estella B. Coyle	7,375
Gallipolis	.....do	Mrs. Addie A. Vanden	8,653
Geneva	Free Public Library	Mrs. Viola A. Wheaton	9,000
Germantown	Public Library	Mrs. Adelaide Taylor	7,620
Greenville	Carnegie Library	Minnie J. Routzong	16,000
Hamilton	Lane Public Library	Mrs. Hattie S. James	15,000
Hillsboro	Public Library	Frances H. Detwiler	10,000
Ironton	Briggs Library	Nellie John Shaw	9,200
Lakewood	Public Library	Roena A. Ingham	20,500
Lancaster	.....do	Ella Hite	11,602

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
OHIO—continued.			
Lebanon	Public Library	Lida Frost	7,000
Lima	do	Martha Gamble	13,500
Lisbon	Lepper Library	Luella Osborne	7,000
London	Public Library	Hattie D. Smith	8,187
Lorain	do	Elizabeth K. Steele	12,160
Mansfield	do	Helen J. Fox	23,178
Marietta	do	Willia D. Cotton	17,785
Marion	do	Helen L. Kramer	11,394
Massillon	McClymonds Public Library	Clara Miller	21,790
Medina	Franklin Sylvester Library	Evangeline Johnson	10,576
Mount Vernon	Public Library	Isabel R. Cooper	9,000
New Straitsville	do	Mrs. Maria E. Martin	7,000
Newark	do	Gertrude Sook	16,000
Niles	do	Ida E. Sloan	7,770
Painesville	do	Margaret Kilbourne	14,000
Perrysburg	Way Public Library	Eleanor D. Moderwell	11,600
Portsmouth	Free Public Library	Nana A. Newton	35,000
Ravenna	Portage County Library	Mrs. S. E. Lawrence	5,633
Salem	Public Library	Anna P. Cook	12,326
Sandusky	do	Claire Graefe	25,000
Shelby	Marvin Memorial Library	Ella Askew	5,400
Sidney	Public Library	Emma Graham	13,000
Springfield	Warder Public Library	Alice Burrowes	35,897
Tiffin	Public Library	Jessie D. Hershiser	12,276
Toledo	do	Herbert S. Hirshberg	150,000
Urbana	do	Mrs. Harriet C. Milne	12,000
Van Wert	Brumback Library	Jane W. Brotherton, acting	35,928
Warren	Public Library	Josephine Lytle	24,331
Washington Courthouse	Carnegie Public Library	Elizabeth Johnson	9,200
Wellington	Public Library	Edith E. Robinson	11,800
Wilmington	Carnegie Library	Minnie Farren	7,000
Wooster	Public Library	Myrtle M. Allen	11,275
Xenia	Greene County Library	Etta G. McElwain	18,193
Youngstown	Reuben McMillan Free Library	Joseph L. Wheeler	89,126
Zanesville	John McIntire Public Library	Mary E. Elder	30,000
OKLAHOMA.			
Ardmore	Carnegie Library	Myrtle Jones	12,500
Atoka	Pioneer Club Library	Mrs. A. Telle	3,000
Bartlesville	Carnegie Library	Ruth W. Brown	4,500
Chickasha	Carnegie Public Library	Kate E. Remington	6,000
Elk City	Carnegie Library	Mrs. Maggie Wood	3,989
El Reno	Carnegie Public Library	Lorna J. Teuscher	7,500
Enid	do	Mrs. Cora C. Porter	12,558
Guthrie	Carnegie Library	Mrs. Mary Choate	9,968
Hobart	do	Mrs. W. A. Phelps	5,870
Lawton	Public Library	Virgie Dayton	5,145
McAlester	do	Mrs. Phoebe E. Hayden	7,483
Muskogee	do	Sarah A. Noble	16,358
Oklahoma	Carnegie Public Library	Mrs. Mabel M. Peacock	30,417
Do	State Library	E. G. Spilman	22,000
Okmulgee	City Library	Mrs. Izora Ground	6,443
Perry	Carnegie Library	Emilie Le Bris	5,000
Ponca City	do	Leah Buchheimer	3,574
Sapulpa	Public Library	Emily Bird Smith	6,000
Shawnee	Carnegie Public Library	Mrs. T. S. Funk	13,000
Tulsa	Public Library	Alma R. McGlenn	14,000
Wagoner	Carnegie Library	Leona Bateman	4,650
Woodward	Carnegie Public Library	Metta M. Woodward	5,000
OREGON.			
Ashland	Free Public Library	Blanche E. Hicks	8,301
Astoria	Public Library	Katherine C. Barker	8,500
Baker	Carnegie Library	Marguerite H. Entler	20,000
Hood River	County Library	Hazel Erchinger	6,750
La Grande	Public Library	Mary A. Nichols	6,000
Medford	do	Clara Van Sant	8,000
Pendleton	Umatilla County Library	Sabra L. Nason	18,000
Portland	Library Association		307,940
Salem	Public Library	Flora M. Case	15,200
Do	State Library	Cornelia Marvin	154,498
The Dalles	Wasco County Library	Flora Carr, acting	15,000

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
PENNSYLVANIA.			
Alexandria	Memorial Public Library	E. P. Walker	4,897
Allentown	Free Library	Isabel McC. Turner	25,000
Ardmore	do	Helen H. Babb	8,000
Athens	Spalding Memorial Library	Helen Thurston	7,446
Beaver Falls	Carnegie Free Library	Elsie Rayle	14,648
Ben Avon	Public Library	E. D. Elliott	5,000
Berwyn	Free Library	Edith Beaumont	5,000
Bethlehem	Free Library of the Bethlehems	Elizabeth D. Burrows	17,000
Bloomsburg	Public Library	Marian E. Mauser	9,170
Braddock	Carnegie Free Library	George H. Lamb	71,000
Bradford	Carnegie Public Library	Grace Steele	23,093
Bristol	Free Library	Mary P. Rogers	5,402
Butler	do	Susan L. Sherman	4,628
Canton	Green Free Library	Sadie L. Parsons	8,530
Carbondale	Free Public Library	Grace M. Copeland	3,000
Carlisle	J. Herman Bosler Memorial Library	William Homer Ames	8,713
Carnegie	Andrew Carnegie Free Library	Mary B. Harris	17,342
Chester	Free Library	Gertrude Hewes	14,000
Do	West End Free Library	Murtle C. Lehman	7,000
Connellsville	Carnegie Free Library	Margaret M. Whiteman	15,000
Conshohocken	Free Library	Loretta C. Much	5,728
Corry	Public Library	Mrs. Emma A. Dean	8,258
Coudersport	do	Frances I. Niles	7,450
Danville	Thomas Beaver Library	Janet Bird	18,000
Darby	Free Library	Mrs Georgie E. Warner	5,000
Duquesne	Carnegie Free Library	Charles E. Wright	30,000
Easton	Public Library	Henry F. Marx	35,638
Elwood City	do	Mrs. Catherine M. Charles	5,518
Erie	do	Mrs. Jean A. Hard	69,000
Fallsington	Fallsington Library	Mary E. Watson	9,000
Foxburg	Free Library	Lottie E. Koos	5,000
Franklin	Library Association	Mary H. Clarke	11,864
Germantown	Friends Free Library	Hannah M. Jones	33,196
Hanover	Public Library	Olive M. Ryder	17,000
Harrisburg	do	Alice R. Eaton	22,000
Do	State Library	Thomas L. Montgomery	200,000
Hatboro	Union Library	Mrs. Charles E. Yerkes	18,000
Hazleton	Public Library	Alice Willigerod	20,098
Homestead	Carnegie Library	W. F. Stevens	45,000
Honesdale	Public Library	Mary Foster	4,000
Jenkintown	Abington Library Society	Florence M. Ridpath	12,885
Johnstown	Cambria Free Library	L. Helen Berkey	33,432
Kane	Public Library	Helen Cheesman	7,250
Kennett Square	Bayard Taylor Memorial Library	Florence Cleaver	7,000
Lancaster	A. Herr Smith Memorial Library	Helen E. Myers	17,982
Langhorne	Langhorne Library	Mrs. Edith Latterthwaite	7,450
Lansdown	Free Public Library	K. Gertrude Van Zandt	9,276
Lebanon	Public Library	Irene A. Klick	7,621
Lewisburg	Himmelreicht Memorial Library	Emily Clingan	5,636
Lock Haven	Annie Halenbake Ross Library	Helen Kintzing, acting	11,200
McKeesport	Carnegie Free Library	Marian Price	11,000
Mauch Chunk	Dimmick Memorial Library	Amelia Pickett	15,476
Meadville	Free Public Library	Charlotta M. Campbell	9,450
Media	Free Library	E. Louise Kruse	7,136
Milford	Homestead Free Library	Mrs. Linda K. Wallace	3,467
Monongahela	Carnegie Free Library	Mrs. S. E. Nicholson	4,000
Montrose	Susquehanna County Free Library	F. A. Alden	13,000
Mount Holly Springs	Amelia S. Given Free Library	Stella Goodyear	6,500
Munhall	Carnegie Library of Homestead	W. F. Stevens	45,000
New Castle	Free Public Library	Alice M. Sterling	11,564
Newtown	Newtown Library Co	W. E. Martindell	9,382
Norristown	William McCann Library	Helen A. Bomberger	7,965
North East	McCord Memorial Library	Rebecca M. Leete	6,000
Oakmont	Public Library	Blanche McIlvaine	6,554
Oil City	Carnegie Public Library	Emily S. Glezen Fay	16,978
Philadelphia	Free Library	John Ashhurst	579,125
Phoenixville	Public Library of the Phoenixville School District.	Ida M. Wagoner	11,357
Pittsburgh	Carengie Free Library of Allegheny	Edward E. Eggers	149,625
Do	Carnegie Library of Pittsburgh	John H. Leete	471,192
Pittston	Free Library	Antoinette L. King	6,000
Pottstown	Public Library		6,500
Pottsville	do	Edith Patterson	14,510
Reading	do	Edward A. Howell	50,000
Ridley Park	Ridley Park Library	Alma L. Deppisch	6,938
Royersford	Free Public Library	Elsie De Walt	7,050
Scottdale	do	Edna L. Krouse	14,000
Scranton	Public Library	Henry J. Carr	87,700
Sewickley	do	Harriet D. McCarty	16,573

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
PENNSYLVANIA—contd.			
Spring City	Public Library	Elizabeth Rogers	3,747
Titusville	Benson Memorial Library	Viola G. Hively	15,000
Towanda	Public Library	Mrs. V. T. Hall	8,866
Troy	....do.	Jane Parsons	4,026
Tunkhannock	Free Public Library	Mary Hoadley	3,386
Vandergrift	....do	Jennie McKenzie	4,600
Wallingford	Helen Kate Furness Free Library	Bertha F. Cantner	3,686
Warren	Library Association	Mary C. Weiss	33,000
Washington	Citizens' Free Library	Janet M. Clark	18,035
Wellsboro	Green Free Library	Mabel Deans	5,506
West Chester	Library Association	Sarah P. Bedford	15,163
Wilkes-Barre	Osterhout Free Library	Myra Poland	52,043
Williamsport	James V. Brown Library	O. R. Howard Thomson	29,310
Wyomissing	Public Library	Alice E. Roeder	2,553
Yardley	Yardleyville Library	Mrs. Helen A. Cook	3,500
York	Public Library	Mai A. Clinedinst	16,181
RHODE ISLAND			
Anthony	Free Library	Myra S. Anthony	2,500
Apponaug	....do	Maude Wathey	7,470
Ashaway	....do	Everett P. Matthewson	8,286
Auburn	Public Library	Bertha L. Barney	9,267
Barrington	....do	Mrs. Erma S. Bradford	14,290
Bristol	Rogers Free Library	George U. Arnold	19,262
Carolina	Public Library	Friend W. Brooks	5,339
Centerdale	Union Library	Frank C. Angell	6,634
Central Falls	Free Public Library	Mrs. Edith H. Gair	11,358
Crompton	Free Library	Bertha M. Brayton	8,350
East Greenwich	....do	Mrs. Ella D. Chapman	11,490
East Providence	Watchemoket Free Public Library	Mrs. Jennie E. Briggs	10,927
Edgewood	Free Public Library	Alice W. Morse	8,258
Greenville	Public Library	Cora L. Burlingame	6,165
Hope Valley	Langworthy Public Library	Gladys Segar	8,225
Jamestown	Philomenian Library	Mrs. L. C. Hammond	8,241
Kingston	Free Library	Isabel Eddy	9,000
Lakewood	....do	Alfred Ellis	7,050
Newport	People's Library	Luella K. Leavitt	36,009
Newport	Redwood Library and Athenæum	George L. Hinckley	66,754
Oak Lawn	Free Public Library	Carlyn W. Searle	8,159
Pawtucket	Deborah Cook Sayles Public Library	William D. Goddard	41,042
Peace Dale	Narragansett Library Association	Mrs. Alice Albro	16,295
Phenix	Pawtuxet Valley Free Library	Velna I. Phillips	10,690
Providence	Public Library	William E. Foster	208,088
Do.	State Library	Herbert O. Brigham	48,887
Do. (Cranston St.)	Arlington Public Library	Mary F. Walker	6,288
Do. (Olneyville Station).	Olneyville Free Library	Mabel Emerson Colwell	11,425
Riverside	Public Library	Mary W. Blodget	6,478
Rumford	East Providence Centre Free Library	Bessie D. Paul	6,180
Shawomet	League Free Library	Mrs. Mary A. S. Lane	6,641
Tiverton	Whitridge Hall Free Library	Mrs. Mary J. S. Stimson	6,805
Warren	George Hail Free Library	Ethel G. Warner	9,875
Westerly	Public Library	Basil B. Wood	50,600
Woonsocket	Harris Institute Library	Ama H. Ward	23,354
SOUTH CAROLINA.			
Anderson	Public Library	Mrs. G. H. Geiger	6,976
Beaufort	Beaufort Township Library	Adeline Scheper	2,327
Charleston	Library Society	Ellen M. Fitz Simons	48,000
Columbia	State Library	Mrs. Virginia G. Moody	40,000
Gaffney	Carnegie Free Library	Mrs. Pratt Pierson	3,800
Greenville	Meblett Free Library	Mrs. Rebecca Deal	12,000
Marion	Public Library	Mrs. Nellie Ellerbe	6,060
Spartanburg	Kennedy Free Library	Mary M. Baugham	10,000
Union	Carnegie Free Library	Miss Neely Sartor	4,770
SOUTH DAKOTA.			
Aberdeen	Alexander Mitchell Library	Mrs. A. H. Drum	11,742
Deadwood	Public Library	Mrs. Elizabeth S. Phelps	5,754
Lead	Hearst Free Library	Martha E. Livingston	13,000
Mitchell	Carnegie Library	Edla Laurson	10,537
Pierre	....do	Mrs. E. C. Jacobsen	7,500
Do.	State Library	Doane Robinson	100,000
Redfield	Carnegie Library	Myrtle Francis	4,650
Sioux Falls	Carnegie Free Library	Alberta A. Caille	19,778
Vermilion	Carnegie Library	Bernice Swezey	4,912
Yankton	....do	Jessie Bartholomew	5,600

XXX.—LIBRARIANS OF PUBLIC AND SOCIETY LIBRARIES—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
TENNESSEE.			
Chattanooga	Public Library	Margaret S. Dunlap	49,959
Harriman	....do	Mrs. M. L. Givan	6,000
Knoxville	Lawson McGhee Library	Mary U. Rothrock	26,723
Memphis	Cossitt Library	Charles D. Johnston	167,020
Nashville	Carnegie Library	G. H. Baskette	85,560
Do	State Library	John Trotwood Moore	200,000
Rugby	Hughes Free Public Library	Helen H. Turner	7,000
TEXAS.			
Abilene	Carnegie Public Library	Mrs. W. L. Grogan	7,000
Austin	State Library	Elizabeth H. West	40,000
Belton	Carnegie Public Library	Emma Lee	3,839
Brownwood	Carnegie Library	Pink V. Noel	5,000
Bryan	Carnegie Public Library	Miss Willie Rogers	6,800
Cleburne	....do	Rebecca Royall	9,548
Coleman	Public Library	Mrs. Cole Lewis	2,700
Corsicana	....do	Mrs. Mattie C. Houston	12,500
Dallas	....do	Betsy T. Wiley	65,000
Denison	XXI Club Library	Mrs. Emma L. Goff	26,000
El Paso	Public Library	Mrs. Maud D. Sullivan	18,137
Fort Worth	Carnegie Public Library	Mrs. Charles Scheuber	37,254
Gainesville	Public Library	Lillian Gunter	6,400
Galveston	Rosenberg Library	Frank C. Patten	67,000
Greenville	Carnegie Library	Ida Pennington	8,000
Houston	Lyceum and Carnegie Library	Julia Ideson	59,000
Lockhart	Dr. Eugene Clark Library	Mae Camp	5,000
Memphis	Carnegie Library	Mrs. J. R. Fore	3,253
Palestine	....do	Georgie McMeans	3,975
Port Arthur	Memorial Library	Mrs. Edward S. Carter	15,000
San Antonio	Carnegie Library	Kate F. Devine	57,013
Sherman	Public Library	Mrs. Nora K. Weems	6,450
Stamford	Carnegie Library	Mrs. J. D. Green	2,670
Terrell	Carnegie Public Library	Mrs. Preston Cobb	8,089
Tyler	Public Library	Caroline F. Gates	12,000
Vernon	Free Library	Lillian Newton	3,000
Waco	Public Library	Gladys Allison	25,974
Waxahachie	N. P. Sims Library	Mrs. Musa Dunn	10,000
Winnsboro	Carnegie Library	Mrs. T. W. Bozeman	3,000
UTAH.			
Cedar City	Public Library	Mrs. E. Crane Watson	5,000
Eureka	....do	Laula Tomlinson	5,842
Garland	....do	Iris Rhodes	2,500
Logan	....do	Dora Wright	2,025
Manti	....do	Edna Larsen	3,628
Moab	....do	Edna Bankhead	4,024
Murray	....do	Vivian Wallace	3,613
Ogden	Carnegie Free Library	Grace W. Harris	21,143
Park City	Public Library	Mrs. Louis Gerard	2,634
Payson	....do	Mabel Wilson	3,075
Provo	....do	Eveline Bean	10,026
Richfield	....do	Mrs. F. A. Robinson	4,000
Richmond	....do	Christene Larson	4,080
Salt Lake City	....do	Joanna H. Sprague	104,799
Do	State Library	H. W. Griffith	19,000
Springville	Public Library	Louise Rowland	2,648
Tooele	....do	Effie Marsden	3,840
VERMONT.			
Barre	Aldrich Public Library	Ruth Parker	25,000
Bellows Falls	Rockingham Free Public Library	Iva M. Young	13,276
Bennington	Free Library	Mrs. H. S. Moses	9,459
Brandon	Free Public Library	Mrs. Ida J. S. Kingsley	7,950
Brattleboro	Free Library	Florence Pratt	29,546
Burlington	Fletcher Free Library	George D. Smith	42,000
Cavendish	Fletcher Town Library	E. G. White	4,000
Chelsea	Public Library	Mary J. George	10,334
Danby	Griffith Memorial Library	Margery Burditt	9,150
Derby Line	Haskell Free Library	O. M. Carpenter	9,187
Fair Haven	Public Library	Mrs. Margaret Colville	7,000
Lyndonville	Cobleigh Public Library	Elizabeth C. Hills	5,922
Manchester	Mark Skinner Library	Anna B. Buck	21,436

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
VERMONT—continued.			
Middlebury	Public Library	Carrie E. Damon	9,000
Montpelier	Kellogg-Hubbard Library	Evelyn S. Lease	32,480
Do	State Library	George W. Wing	80,000
Newbury	Tenney Memorial Library	Frances M. Atkinson	8,600
Newport	Goodrich Memorial Library	Lizzie M. Sargent	10,700
Pittsford	Maclure Library	Mary R. Allen	8,500
Poultney	Public Library	Lelia M. Vaughan	5,000
Proctor	Free Library	Mary K. Norton	12,000
Randolph	Kimball Public Library	Desier C. Moulton	8,800
Rutland	Free Library	Lucy D. Cheney	23,780
Do	H. H. Baxter Memorial Library	Mrs. A. P. Riker	14,000
St. Albans	Free Library	Bertha C. Jennison	9,000
St. Johnsbury	St. Johnsbury Atheneum	Cornelia Fairbanks	23,000
Springfield	Town Library	Elizabeth McCarthy	10,660
Strafford	Harris Library	Helen D. Moore	7,300
Vergennes	Bixby Memorial Free Library	Edith J. Chamberlin	9,984
Waterbury	Public Library	Mrs. Thos. C. O'Neill	7,000
Windsor	Library Association	Jennie C. Penniman	16,500
Woodstock	Norman Williams Public Library	Alice L. Eaton	22,500
VIRGINIA.			
Alexandria	Alexandria Library	Alice J. Green	10,000
Farmville	Public Library	Martha K. Blanton	3,300
Fredericksburg	Wallace Library	Sally N. Gravatt	5,500
Lynchburg	Jones Memorial Library	E. K. Peck	5,000
Newport News	Public Library	H. B. Bailey	15,400
Norfolk	do	Mary D. Pretlow	30,498
Orange	Orange Library	Leslie McIntosh	2,500
Portsmouth	Public Library	Esther M. Wilson	10,000
Richmond	State Library	H. R. McIlwaine	120,000
Waynesboro	Public Library	Mary L. Peale	3,700
Winchester	Handley Library	C. Vernon Eddy	12,000
WASHINGTON.			
Bellingham	Public Library	Mrs. K. M. Ryan	38,000
Everett	do	Mabel Ashley	13,109
Hoquiam	do	Agnes V. Johnson	8,623
Olympia	State Library	J. M. Hitt	38,000
Ritzville	Public Library	Mrs. Claire L. Miller	6,553
Seattle	do	Judson T. Jennings	323,423
Spokane	do	George W. Fuller	90,862
Tacoma	do	John B. Kaiser	101,287
Walla Walla	do	Ellen G. Smith	12,000
Yakima	do	Eleanor Stephens	11,215
WEST VIRGINIA.			
Bluefield	Public Library	Gertrude Oliver	8,228
Charleston	Department Archives and History	Clifford R. Myers	80,000
Do	Public Library	Mrs. Elizabeth von Schlectendahl.	18,000
Do	State Law Library	B. H. Oxley	30,000
Clarksburg	Public Library	Miss S. Scollay Page	3,000
Huntington	do	Miss Lewis Harvey	19,000
Parkersburg	Carnegie Library	Anna E. Taylor	18,402
Sistersville	Public Library	Bertha E. Chadderdon	5,100
Wheeling	do	Etta M. Roberts	41,928
WISCONSIN.			
Antigo	Free Public Library	Grace W. Estes	12,442
Appleton	do		14,347
Ashland	Vaughn Public Library	Cecile M. Fennelly	8,362
Baraboo	Public Library	Kate M. Potter	10,580
Beaver Dam	Williams Free Library	Hattie A. Doolittle	12,022
Beloit	Public Library	Nellie B. McAlpine	18,028
Berlin	do	Margaret Biggert	6,446
Chippewa Falls	do	Marion E. Bryant	11,117
Columbus	do	Nellie A. Loomis	6,411
Darlington	do	Hattie B. Greene	6,000
Delavan	Aram Public Library	Agnes Buckmaster	6,830
De Pere	Public Library	Helen S. Mathews	7,900
Eau Claire	do	Laura M. Olsen	27,398
Evansville	Eager Free Public Library	Mae G. Phillips	7,096

XXX.—Librarians of Public and Society Libraries—Continued.

Location.	Name of library.	Librarian.	Number bound volumes.
WISCONSIN—continued.			
Fond du Lac	Public Library	Leila A. Janes	30,000
Fort Atkinson	Dwight Foster Public Library	Elizabeth M. Short	5,710
Grand Rapids	T. B. Scott Free Library	Olea M. Solheim	9,786
Green Bay	Kellogg Public Library	Deborah B. Martin	36,748
Hayward	Carnegie Free Library	Marion Mathiew	4,000
Hudson	Public Library	Lucille C. Menkey	6,233
Janesville	do	Fannie Cox	21,000
Kaukauna	Free Public Library	Lillian E. Bell	6,238
Kenosha	Gilbert M. Simmons Library	Cora M. Frantz	37,185
Kilbourn	Public Library	Lillian F. Ramsay	6,250
La Crosse	do	Lilly M. E. Borresen	35,000
Lake Geneva	do	Gertrude J. Noyes	7,000
Madison	Free Library	Mary A. Smith	45.538
Do	State Library	Gilson G. Glasier	70,000
Manitowoc	Public Library	Martha E. Pond	14,656
Marinette	Stephenson Public Library	Gladys May Andrews	16,850
Marshfield	Free Library	Alice J. Milleed	9,546
Menasha	Elisha D. Smith Library	Harriett Northrup	13,066
Menomonie	Tainter Memorial Free Library	Mrs. Essie Nickerson	14,801
Merrill	T. B. Scott Library	Edna Dearth Orr	10,076
Milwaukee	Public Library	Matthews S. Dudgeon	395,113
Mineral Point	do	Margaret A. Crawford	6,500
Monroe	Arabut Ludlow Memorial Library	Mrs. Nellie W. Kohli	11,708
Neenah	Public Library	Ida B. Kellogg	13,482
Oconomowoc	do	Anna R. Jones	7,082
Oconto	Farnsworth Public Library	Gwenn Perry	9,367
Oshkosh	Public Library	Edith K. Van Eman	36,922
Portage	Free Public Library	Mary E. Porter	14,000
Racine	Public Library	Frances A. Hannum	44,000
Rhinelander	Free Public Library	Jessie W. Bingham	7,392
Rice Lake	Public Library	Odile M. Demers	6,098
Ripon	do	Blanche Thompson	8,424
St. Francis	Salzmann Library	Rev. Dr. A. C. Breig	19,000
Sheboygan	Public Library	Bertha Marx	16,989
Sparta	Free Library	Jennie Scouten	9,903
Stanley	Public Library	Edith Rechcygl	4,461
Stevens Point	do	Amy Anderson	7,020
Superior	do	Blanch L. Unterkircher	41,649
Washburn	do	Mrs. May M. Greenwood	6,053
Watertown	Free Public Library	Vivian G. Little	10,171
Waukesha	Public Library	Clara E. Shadall	8,139
Waupun	do	Clara L. Lindsley	8,428
Wausau	do	Cora I. Lansing	13,967
Wauwatosa	do	Grace E. Loveland	7,429
West Allis	do	Winnefred Bailey	4,286
Whitewater	do	Ella A. Hamilton	9,121
WYOMING.			
Basin	Big Horn County Library	Mildred G. Brown	5,000
Buffalo	Johnson County Public Library	Clara W. Bond	5,000
Casper	Natrona County Public Library	Mrs. E. Rogers	7,000
Cheyenne	Carnegie Public Library	Mrs. Luella G. Moore	17,000
Do	State Library	Agnes R. Wright	60,000
Douglas	Carnegie Library Converse County	Margaret B. Clarke	5,098
Evanston	Uinta County Public Library	Besse N. Blackham	8,126
Lander	Fremont Public Library	Allie Davis	4,300
Laramie	Carnegie Public Library	Lueva Montgomery	13,000
Lusk	Carnegie Library	Mrs. Louisa K. Fowler	1,500
Rock Springs	do	Mrs. Mary A. Clark	3,090
Thermopolis	Carnegie Library, Hot Springs County	Hilda Gatewood	2.800
Wheatland	Platte County Public	Beatrice Lucas	4,550

XXXI.—Executive Officers of State Library Commissions.[1]

Executive officer.	Post-office address.	Name of commission.
Mrs. Marie B. Owen, director	State Capitol, Montgomery, Ala.	State department of archives and history, library extension division.
George B. Rose, chairman	Little Rock, Ark.	Arkansas library commission.
Milton J. Ferguson, librarian	State Library, Sacramento, Calif.	California State library.
Charlotte A. Baker, secretary	Fort Collins, Colo.	State board of library commissioners.
Carrie M. Cushing, librarian	The Capitol, Denver, Colo.	State traveling library commission.
Charles D. Hine, chairman	Hartford, Conn.	Connecticut public library committee.
Earle D. Willey, secretary	State Library, Dover, Del.	State library commission.
Charlotte Templeton, secretary	Carnegie Library, Atlanta, Ga.	Do.
Mrs. Marie M. Schreiber, secretary.	Statehouse, Boise, Idaho	Do.
Anna M. Price, secretary	Springfield, Ill.	Illinois library extension commission.
William J. Hamilton, secretary	Statehouse, Indianapolis, Ind.	State public library commission.
Julia A. Robinson, secretary	State Historical Building, Des Moines, Iowa.	State library commission.
Mrs. Adrian Greene, secretary	State Library, Topeka, Kans.	Kansas traveling libraries commission.
Fannie C. Rawson, secretary	The Capitol, Frankfort, Ky.	Kentucky library commission.
Henry E. Dunnack, secretary	State Library, Augusta, Me.	Maine library commission.
Mrs. M. A. Newell, secretary	6 E. Read St., Baltimore, Md.	Maryland public library commission.
E. Louise Jones, general secretary and library adviser.	State Library, Boston, Mass.	Massachusetts free public library commission.
Mrs. Mary C. Spencer, secretary.	State Library, Lansing, Mich.	State board of library commissioners.
Clara F. Baldwin, director	The Capitol, St. Paul, Minn.	Library division, State department of education.
Irving R. Bundy, secretary	The Capitol, Jefferson City, Mo.	Missouri library commission.
Nellie Williams, secretary	The Capitol, Lincoln, Nebr.	State public library commission.
Grace E. Kingsland, secretary	Concord, N. H.	Do.
Henry C. Buchanan, secretary	Trenton, N. J.	Do.
James I. Wyer, jr., director	Albany, N. Y.	State library.
William R. Watson, chief of division.	....do	Division of educational extension, University of the State of New York.
Mary B. Palmer, secretary	Raleigh, N. C.	North Carolina library commission.
S. Blanche Hedrick, director	Bismarck, N. Dak.	State public library commission.
John H. Newman, secretary	State Library, Columbus, Ohio	State board of library commissioners.
Mrs. J. R. Dale, secretary	Oklahoma City, Okla.	Oklahoma library commission.
Cornelia Marvin, librarian	Supreme court building, Salem, Oreg.	State library.
T. L. Montgomery, librarian	State Library, Harrisburg, Pa.	Division of library extension, State library.
Walter E. Ranger, secretary	Statehouse, Providence, R. I.	State committee on libraries, Rhode Island State education department.
Leora J. Lewis, field librarian	Statehouse, Pierre, S. Dak.	State free library commission.
Marie Smith, clerk	Nashville, Tenn.	Division of library extension, Department of public instruction.
Elizabeth H. West, secretary	State Library, Austin, Tex.	State library and historical commission.
Mary E. Downey, secretary and organizer.	Salt Lake City, Utah	State library.
Ruth L. Brown, secretary	34 Elm St., Montpelier, Vt.	State free public library commission.
H. R. McIlwaine, librarian	State Library, Richmond, Va.	Virginia State library.
J. M. Hitt, secretary	State Library, Olympia, Wash.	State library commission.
Clarence B. Lester, secretary	The Capitol, Madison, Wis.	Wisconsin free library commission.

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[1] Thirty-eight States have library commissions, or the equivalent, as here indicated.

XXXII.—Directors of Library Schools.

Location.	Name of institution.	Director.
Berkeley, Calif.	University of California Library School	Harold L. Leupp, librarian.
Los Angeles, Calif.	Public Library Training School	Marion L. Horton, principal.
Riverside, Calif.	Riverside Library Service School	Joseph F. Daniels, director.
Atlanta, Ga.	Library Training School (Carnegie Library)	Tommie Dora Barker, director.
Urbana, Ill.	University of Illinois Library School	Phineas L. Windsor, director.
Boston, Mass.	Simmons College School of Library Science	June R. Donnelly, director.
St. Louis, Mo.	St. Louis Library School	Arthur E. Bostwick, director.
Albany, N. Y.	New York State Library School	James I. Wyer, jr., director.
Brooklyn, N. Y.	Pratt Institute School of Library Science	Edward F. Stevens, director.
New York, N. Y.	Library School of the New York Public Library	Ernest J. Reece, principal.
Syracuse, N. Y.	Syracuse University Library School	Earl E. Sperry, director.
Cleveland, Ohio	Western Reserve Library School (Western Reserve University).	Alice S. Tyler, director.
Pittsburgh, Pa.	Carnegie Library School	John H. Leete, director.
Austin, Tex.	University of Texas School of Library Science.	J. E. Goodwin, chairman.
Seattle, Wash.	University of Washington Library School	William E. Henry, director.
Madison, Wis.	Wisconsin Library School (Wisconsin Free Library Commission and the University of Wisconsin).	Mary E. Hazeltine, preceptor.

XXXIII.—EDUCATIONAL BOARDS AND FOUNDATIONS.

Name of board.	President.	Secretary.	Meeting.
American Field Service Fellowships for French Universities	J. J. Jusserand, 2460 16th St., N. W., Washington, D. C.	I. L. Kandel, 522 5th Ave., New York, N. Y.	
Anna T. Jeanes Fund....	James H. Dillard, Box 418, Charlottesville, Va.	John T. Emlen, 4th and Chestnut Sts., Philadelphia, Pa.	New York, N. Y., June 22, 1921.
Baron de Hirsch Fund...	Eugene S. Benjamin, 130 East 25th St., New York, N. Y.	Max J. Kohler, 52 William St., New York, N. Y.	New York, N. Y.
Carnegie Corporation of New York.	James R. Angell, 522 5th Ave., New York, N.Y.	James Bertram, 522 5th Ave., New York, N.Y.	Do.
Carnegie Foundation for the Advancement of Teaching.	Henry S. Pritchett, 522 5th Ave., New York, N. Y.	Clyde Furst, 522 5th Ave., New York, N.Y.	
Child Education Foundation.	Emmett Hay Naylor, 18 East 41st St., New York, N. Y.	Lefferts Hutton, 257 West 86th St., New York, N. Y.	Do.
Commission for Relief in Belgium Educational Foundation.	Herbert Hoover, 120 Broadway, New York, N. Y.	....	
Fairhope Educational Foundation.	Edwin S. Potter, 18 East 41st St., New York, N. Y.	W. J. Hoggson, 18 East 41st St., New York, N. Y.	
General Education Board.	Wallace Buttrick, 61 Broadway, New York, N. Y.	Abraham Flexner and Trevor Arnett, 61 Broadway, New York, N.Y.	New York, N. Y., Dec. 2, 1920.
John F. Slater Fund......	James H. Dillard, Box 418, Charlottesville, Va.	Gertrude C. Mann, Box 418, Charlottesville, Va.	New York, N. Y., Dec. 15, 1920.
Julius Rosenwald Fund..	Julius Rosenwald, Chicago, Ill.	William C. Groves, Chicago, Ill.	
Kahn Foundation for the Foreign Travel of American Teachers.	Edward D. Adams, 71 Broadway, New York, N. Y.	Frank D. Fackenthal, Substation 84, New York, N. Y.	
Peabody Foundation for International Educational Correspondence.	Mrs. Mary G. Howard, Chattanooga, Tenn.	Mrs. F. L. Underwood, Ferges Place, Chattanooga, Tenn.	
Phelps-Stokes Fund......	I. N. Phelps-Stokes, chairman, 100 William St., New York, N. Y.	Anson Phelps-Stokes, Yale University, New Haven, Conn.	New York, N. Y., Nov. 17, 1920.
Rockefeller Foundation...	George E. Vincent, 61 Broadway, New York, N. Y.	Edwin R. Embree, 61 Broadway, New York, N. Y.	New York, N. Y., Dec. 1, 1920.
Russell Sage Foundation..	Robert W. de Forest, 30 Broad St., New York, N. Y.	John M. Glenn, 130 East 22d St., New N. Y.	

XXXIV.—CHURCH EDUCATIONAL BOARDS AND SOCIETIES.

The following list shows, first, the name of the organization; second, the name and address of the president; third, the name and address of the secretary; fourth, the place and date of the next meeting.

Council of Church Boards of Education in the United States: A. W. Harris, 150 Fifth Avenue, New York, N. Y.; Robert L. Kelly, 45 West Eighteenth Street, New York, N. Y.; New York, N. Y., January 5, 1921.

American Christian Convention, Department of Education: W. G. Sargent, 11 Rutland Street, Providence, R. I.; Hugh A. Smith, 205 West Ward Street, Versailles, Ohio; Dayton, Ohio, October 19, 1920.

Church of the Brethren, General Educational Board: D. W. Kurtz, McPherson, Kans.; D. C. Reber, North Manchester, Ind.; Elgin, Ill., August, 19, 1920.

Church of the United Brethren in Christ, Board of Education: C. J. Kephart, 3936 Harrison Avenue, Kansas City, Mo.; William E. Schell, 302 Otterbein Press Building, Dayton, Ohio; Indianapolis, Ind., about May 12, 1921.

Congregational Education Society: Charles R. Brown, Yale University, New Haven, Conn.; Frank M. Sheldon, 14 Beacon Street, Boston, Mass.; Boston, Mass., September 28, 1920.

Disciples of Christ, Board of Education: I. N. McCash, Phillips University, East Enid, Okla.; H. O. Pritchard, 222 Downing Avenue, Indianapolis, Ind.; St. Louis, Mo., October 18-24, 1920.

Mennonites of North America, General Conference, Board of Education: S. K. Mosiman, Bluffton, Ohio; J. H. Langewalter, Newton, Kans.; probably June, 1921.

Methodist Episcopal Church, Board of Education: L. H. Murlin, Boston University, Boston, Mass.; R. J. Trevorrow, Centenary Collegiate Institute, Hackettstown, N. J.; Chicago, Ill., January, 1921.

Methodist Episcopal Church, South, Board of Education: W. B. Murrah, Memphis, Tenn.; Stonewall Anderson, 810 Broadway, Nashville, Tenn.

Methodist Protestant Church, Board of Education: J. W. Knott, New Brighton, Pa.,; George H. Miller, 507 Pittsburgh Life Building, Pittsburgh, Pa.; Pittsburgh, Pa., October, 1920.

Northern Baptist Convention, Board of Education: Ernest D. Burton, University of Chicago, Chicago, Ill.; Frank W. Padelford, 276 Fifth Avenue, New York, N. Y.; Winona Lake, Ind., June 22, 1921.

Presbyterian Church in the United States of America, General Board of Education: Hugh T. Kerr, Pittsburgh, Pa.; Edgar P. Hill, 156 Fifth Avenue, New York, N. Y.; New York, N. Y., September 15, 1920.

Presbyterian Church in the United States (Southern), Executive Committee of Education: D. H. Ogden, 410 Urban Building, Louisville, Ky.; Henry H. Sweets, 410 Urban Building, Louisville, Ky.; Louisville, Ky., April 1, 1921.

Protestant Episcopal Church, Department of Religious Education: Thomas F. Gailor, 281 Fourth Avenue, New York, N. Y.; William E. Gardner, 289 Fourth Avenue, New York, N. Y.; New York, N. Y., October 12, 1920.

Reformed Church in America, Board of Education: Albertus T. Broek, 25 East Twenty-second Street, New York, N. Y.; Willard D. Brown, 25 East Twenty-second Street, New York, N. Y.; New York, N. Y., September 28, 1920.

Seventh-Day Adventists, Department of Education: Secretary, W. E. Howell, Takoma Park, Washington, D. C.

Seventh-Day Baptist Education Society: William C. Whitford, Alfred, N. Y.; Frank L. Greene, Alfred, N. Y.; Alfred, N. Y., September 21, 1920.

Society of Friends, 5-Years' Meeting, Board of Education: David M. Edwards, Earlham College, Richmond, Ind.; J. Edwin Jay, Wilmington College, Wilmington, Ohio.

Society of Friends, General Conference; Committee on Education: Chairman, Thomas A. Jenkins, 5411 Greenwood Avenue, Chicago, Ill.; 1922.

Southern Baptist Convention, Education Board: Frank S. White, Birmingham, Ala.; J. E. Dillard, 317 Jefferson County Building, Birmingham, Ala.

United Lutheran Church in America, Board of Education: A. J. Turkle, Pittsburgh, Pa.; Charles W. Bauslin, 412 Evans Building, Pittsburgh, Pa.; December 14, 1920.

United Luthern Church in America, Board of Education: A. J. Turkle, Pittsburgh, Pa.; F. G. Gotwald; York, Pa.

United Presbyterian Church, Board of Education: David F. Matchett, 6133 Ellis Avenue, Chicago, Ill., John E. Bradford, 1344 East Sixty-third Street, Chicago, Ill.; Chicago, Ill., May, 1921.

XXXV.—Jewish Educational Organizations.

The following list shows, first, the name of the association; second, the name and address of the president; third, the name and address of the secretary; fourth, the place and date of the next meeting.

1. *National.*

Central Conference of American Rabbis, Religious Education Committee:

Council of Jewish Women: Mrs. Enoch Rauh, 5837 Bartlett Street, Pittsburgh, Pa.; Mrs. L. G. Ball, 6719 McPherson Boulevard, Pittsburgh, Pa.; Pittsburgh, Pa., October 28, 1920.

Educational League for the Higher Education of Orphans: Alfred A. Benesch, Society for Savings Building, Cleveland, Ohio; Eugene E. Wolf, 336 Engineers Building, Cleveland, Ohio; Cleveland, Ohio, October, 1920.

Jewish Chautauqua Society: Jacob Goldbaum, 4636 Walnut St., Philadelphia, Pa.; Jeanette M. Goldberg, 1306 Stephen Girard Building, Philadelphia, Pa.; Cleveland, Ohio, December 26–30, 1920.

Union of American Hebrew Congregations, Board of Managers of Synagogue and School Extension: Charles Shohl, First National Bank Building, Cincinnati, Ohio; George Zepin, 62 Duttenhofer Building, Cincinnati, Ohio; Buffalo, N. Y., May, 1921.

2. *City.*

Bureau of Education of the Jewish Community of New York City: Judah L. Magnes, 114 Fifth Avenue; Samson Benderly, 114 Fifth Avenue.

Educational Alliance (New York City): Samuel Greenbaum, 2 East Ninety-fourth Street; Bernard M. L. Ernst, 25 Claremont Avenue; January, 1921.

Hebrew Education Society (Newark, N. J.): Moses Roth, 366 Grove Road, South Orange; Samuel Roessler, 174 Littleton Avenue.

Hebrew Education Society of Philadelphia (Pa.): Clarence L. Marks, 146 North Thirteenth Street; Bernard Harris, 609 Stephen Girard Building; May, 1921.

Jewish Educational and Charitable Association (St. Louis, Mo.): Maurice Weil, Fourteenth and Locust Streets; Walter S. Marx, 3636 Page Street.

XXXVI.—Superintendents of Catholic Parochial Schools.

[Archdioceses are indicated by an asterisk (*).]

Diocese or archdiocese.	Name and title of supervising officer.	Address.
Albany, N. Y	Rev. Joseph A. Dunney, S. T. L., inspector of schools.	454 Western Ave., Albany, N. Y.
Baker City, Oreg	Rev. Hugh J. Marshall, diocesan inspector of schools.	Klamath Falls, Oreg.
*Baltimore, Md	Rev. Lawrence A. Brown, superintendent (Baltimore City).	Catonsville, Baltimore, Md.
*Boston, Mass	Rev. Augustine F. Hickey, S. T. L., diocesan supervisor of schools.	75 Union Park St., Boston, Mass.
Brooklyn, N. Y	Rev. Joseph V. S. McClancy, inspector of schools.	749 Linwood St., Brooklyn, N. Y.
Buffalo, N. Y	Rev. Francis T. Kanaley, superintendent of parochial schools.	1974 Seneca St., Buffalo, N. Y.
*Cincinnati, Ohio	Rev. William Schmitt, superintendent of parochial schools.	734 Hawthorne St., Cincinnati, Ohio.
Cleveland, Ohio	Rev. William A. Kane, diocesan superintendent of parochial schools.	1027 Superior Ave. NE., Cleveland, Ohio.
	Rev. Thomas P. Mulligan, assistant superintendent.	Do.
Columbus, Ohio	Rev. John J. Murphy, superintendent of schools.	414 North Broadway, Columbus, Ohio.
Crookston, Minn	Rev. Thomas G. Merrill, diocesan superintendent of schools.	Red Lake Falls, Minn.
Erie, Pa	Rev. Joseph Wehrle, D. D., superintendent of schools.	
Fall River, Mass	Rev. Francis J. Bradley, D. D., diocesan school visitor.	274 Second St., Fall River, Mass.
	Rev. L. Damase Robert, diocesan school visitor.	889 Pine St., Fall River, Mass.
Fargo, N. Dak	Very Rev. John Baker, V. G., inspector of schools.	Valley City, N. Dak.
Fort Wayne, Ind	Rev. A. E. Lafontaine, superintendent of schools.	1140 Clinton St., Fort Wayne, Ind.
Galveston, Tex	Rev. J. B. O'Leary, diocesan director of schools.	Tenth and Harvard Sts., Houston, Tex.
Grand Rapids, Mich	Rev. R. W. Brown, P. R., acting superintendent of parochial schools.	733 Bridge St., Grand Rapids, Mich.
Hartford, Conn	Rev. W. J. Fitzgerald, S. T. L., diocesan supervisor of schools.	340 Collins St., Hartford, Conn.
Helena, Mont	Rev. John J. Tracy, diocesan superintendent of schools.	Mt. St. Charles College, Helena, Mont.
Lafayette, La	Rev. Anthony F. Isenberg, superintendent of schools.	Crowley, La.
Little Rock, Ark	Right Rev. Msgr. Thomas V. Tobin, superintendent.	Cathedral, Little Rock, Ark.
Manchester, N. H	Rev. Patrick J. Scott, diocesan superintendent of schools.	86 Arlington St., Manchester, N. H.
Nashville, Tenn	Rev. S. A. Stritch, D. D., supervisor of diocesan schools.	2001 West End Ave., Nashville, Tenn.
*New Orleans, La	Rev. F. X. Twellmeyer, S. J., superintendent	
*New York, N. Y	Rev. Joseph F. Smith, superintendent of schools.	328 West 14th St., New York, N. Y.
	Rev. Michael J. Larkin, S. T. B., superintendent of schools, Westchester, Dutchess, and Putnam Counties).	15 Beauchamp Pl., New Rochelle, N. Y.
	Rev. John J. Mitty, D. D., superintendent of schools (Rockland, Orange, Sullivan, and Ulster Counties).	Highland Falls, N. Y.
Newark, N. J	Rev. John A. Dillon, superintendent of schools.	91 Washington St., Newark, N. J.
	Rev. William F. Lawlor, assistant superintendent of schools.	691 Westside Ave., Jersey City, N. J.
Omaha, Nebr	Right Rev. Msgr. J. Ruesing, inspector of schools.	Westpoint, Nebr.
*Oregon City, Oreg	Rev. Albert J. Carmody, D. D., diocesan superintendent of schools.	241 Sherman St., Portland, Oreg.
*Philadelphia, Pa	Rev. John E. Flood, superintendent of parochial schools.	242 South 20th St., Philadelphia, Pa.
	Rev. Joseph M. O'Hara, assistant superintendent of parochial schools.	1429 North 11th St., Philadelphia, Pa.
Pittsburgh, Pa	Rev. Ralph L. Hayes, D. D., superintendent of schools.	116 North Dithridge St., Pittsburgh, Pa.
Rochester, N. Y	Rev. Joseph S. Cameron, Ph. B., superintendent of schools.	Bath, N. Y.
*St. Louis, Mo	Rev. James P. Murray, superintendent of parish schools and high schools.	2122 South 12th St., St. Louis, Mo.

XXXVI.—SUPERINTENDENTS OF CATHOLIC PAROCHIAL SCHOOLS—Continued.

[Archdioceses are indicated by an asterisk (*).]

Diocese or archdiocese.	Name and title of supervising officer.	Address.
San Antonio, Tex	Rev. J. Weckesser, S. M., school superintendent.	St. Mary's College, San Antonio, Tex.
*San Francisco, Calif	Rev. Ralph Hunt, S. T. L., superintendent of schools.	1200 Florida St., San Francisco, Calif.
Scranton, Pa	Rev. J. A. Boyle, LL. D., superintendent of schools.	1427 College Ave., Scranton, Pa.
Springfield, Mass	Rev. John F. Conlin, P. R., diocesan school visitor.	Chicopee, Mass.
	Rev. P. F. Doyle, assistant diocesan school visitor.	Brookfield, Mass.
Syracuse, N. Y	Rev. Charles F. McEvoy, superintendent of schools.	257 East Onondaga St., Syracuse, N. Y.
Toledo, Ohio	Rev. George Johnson, diocesan superintendent of parochial schools.	2535 Collingwood Ave., Toledo, Ohio.
Trenton, N. J	Rev. Patrick J. Clune, superintendent of parochial schools.	43 Manning Ave., North Plainfield, N. J.

XXXVII.—DIRECTORS OF SCHOOLS FOR SOCIAL WORKERS.

Location.	Name of institution.	Director.
Washington, D. C	National Service School for Women	Maud R. Cavanagh.
Chicago, Ill	School of Social Service (University of Chicago)	Leon C. Marshall.
New Orleans, La	School of Social Service (Newcomb College, Tulane University).	R. J. Colbert.
Boston, Mass	School of Social Work (Simmons College)	Stuart A. Queen.
St. Louis, Mo	Missouri School of Social Economy	George B. Mangold.
New York, N. Y	New York School of Social Work	Porter R. Lee.
Chapel Hill, N. C	School of Public Welfare (University of North Carolina)	Howard W. Odum.
Cleveland, Ohio	School of Applied Social Sciences (Western Reserve University).	James E. Cutler.
Philadelphia, Pa	Pennsylvania School for Social Service	Frank D. Watson.
Richmond, Va	School of Social Work and Public Health	Henry H. Hibbs, jr.

XXXVIII.—INTERNATIONAL ASSOCIATIONS OF EDUCATION.

The following list shows, first, the name of the association; second, the name and address of the president; third, the name and address of the secretary; fourth, the place and date of the next meeting.

American University Union in Europe: H. P. Judson, University of Chicago, Chicago, Ill.; J. W. Cunliffe, Columbia University, New York, N. Y.; New York, N. Y., May, 1921.

International Association of Teachers of Printing: Harry J. Burns, 22 Grant Street, Newark, N. J.; Lester I. Dygert, P. O. Box 1, Springfield, Mass.

Institute of International Education: Director, Stephen P. Duggan, 419 West One hundred and seventeenth Street, New York, N. Y.

International Commission on the Teaching of Mathematics: G. Klein, Göttingen, Germany; H. Fehr, Geneva, Switzerland.

International Federation of Catholic Alumnæ: Mrs. John McEmry, 2005 Seventh Avenue, Moline, Ill.; Ruth Isreal, Boston, Mass.; Louisville, Ky., October, 1922.

International Federation of University Women: Caroline F. E. Spurgeon, Bedford College, London, England; Theodora Bosanquet, 50 Russell Square, W. C. 1, London, England; summer 1922.

International Kindergarten Union: Nina C. Vandewalker, Bureau of Education, Washington, D. C.; May Murray, 40 High Street, Springfield, Mass.; Detroit, Mich., May 2-6, 1921.

International Sunday School Association: William O. Thompson, Ohio State University, Columbus, Ohio; Marion Lawrance, 1516 Mallers Building, Chicago, Ill.; Kansas City, Mo., June, 1922.

Union Académique Internationale: E. C. Armstrong, Princeton, N. J.; John Erskine, Columbia University, New York, N. Y.

Union des Associations Internationales: Address: Paul Otlet, 3 bis, Rue de la Régence, Brussels, Belgium.

World's Student Christian Federation: John R. Mott, 347 Madison Avenue, New York, N. Y.; Ruth Rouse, 28 Lancaster Road, Wimbledon, London, S. W. 19, England; China, within the next two or three years.

XXXIX.—AMERICAN EDUCATIONAL ASSOCIATIONS.

The following list shows, first, the name of the association; second, the name and address of the president; third, the name and address of the secretary; fourth, the place and date of the next meeting

1. *National and sectional.*

Alumni Association of American Rhodes Scholars: Leonard W. Cronkhite, 185 Devonshire Street, Boston, Mass.; Frank Aydelotte, Massachusetts Institute of Technology, Cambridge, Mass.

American Association for the Advancement of Agricultural Teaching: A. W. Nolan, University of Illinois, Urbana, Ill.; C. D. Jarvis, Bureau of Education, Washington, D. C.

American Association for the Advancement of Science, Section L: Charles H. Judd, University of Chicago, Chicago, Ill.; B. T. Baldwin, State University of Iowa, Iowa City, Iowa; Chicago, Ill., December 27, 1920, to January 1, 1921.

American Association for the Study of the Feeble Minded: H. A. Haynes, Lapeer, Mich.; B. W. Baker, Laconia, N. H.; Boston, Mass., about June 1, 1921.

American Association of Agricultural College Editors: L. G. Osborn, Baton Rouge, La.; M. V. Atwood, Ithaca, N. Y.; Columbia, Mo., June, 1921.

American Association of College News Bureaus: T. T. Frankenberg, 16 East Broad Street, Columbus, Ohio; J. F. Wright, University of Illinois, Urbana, Ill.; St. Louis, Mo., probably Christmas holidays, 1920.

American Association of Collegiate Registrars: Charles M. McConn, Urbana, Ill.; Raymond Walters, Lehigh University, South Bethlehem, Pa.; probably April, 1921.

American Association of Farmers' Institute Workers: J. W. Neill, Austin, Tex.; Wesley Webb, Dover, Del.; Chicago, Ill., December 1–3, 1920.

American Association of Instructors of the Blind: Edward M. Van Cleve, 412 Ninth Avenue, New York, N. Y.; C. A. Hamilton, Batavia, N. Y.; summer, 1922.

American Association of Teachers Colleges: John R. Kirk, Kirksville, Mo.; J. G. Crabbe, Greeley, Colo.; Atlantic City, N. J., February 26, 1921.

American Association of Teachers of Journalism: H. F. Harrington, University of Illinois, Urbana, Ill.; John L. Brumm, University of Michigan, Ann Arbor, Mich.; probably St. Louis or Columbia, Mo., November, 1920.

American Association of Teachers of Spanish: Lawrence A. Wilkins, 598 West One hundred and ninety-first Street, New York, N. Y.; Alfred Coester, Stanford University, Calif.; Chicago, Ill., December 30, 1920.

American Association of University Professors: Vice president, Vernon Kellogg, National Research Council, Washington, D. C.; H. W. Tyler, 222 Charles River Road, Cambridge, Mass.; Chicago, Ill., December 27–28, 1920.

American Association to Promote the Teaching of Speech to the Deaf: Harris Taylor, 904 Lexington Avenue, New York, N. Y.; Fred DeLand, 1601 Thirty-fifth Street, NW., Washington, D. C.

American Bar Association, Section of Legal Education: Elihu Root, 31 Nassau Street, New York, N. Y.; John B. Sanborn, Gay Building, Madison, Wis.

American Classical League: Andrew F. West, Princeton University, Princeton, N. J.; Shirley Weber, Princeton, N. J.; probably Philadelphia, Pa., July, 1921.

American Conference of Pharmaceutical Faculties: Wilber J. Teeters, Iowa City, Iowa; Theodore J. Bradley, 179 Longwood Avenue, Boston, Mass.; New Orleans, La., September, 1921.

American Council of Learned Societies Devoted to Humanistic Studies: C. H. Haskins, Harvard University, Cambridge, Mass.; G. M. Whicher, Hunter College, New York, N. Y.; probably New York, N. Y., January, 1921.

American Council on Education: Chairman, Harry Pratt Judson, University of Chicago, Chicago, Ill.; Secretary, Virginia C. Gildersleeve, Barnard College, New York, N. Y.; Director, Samuel P. Capen, 818 Connecticut Avenue, Washington, D. C.; May, 1921.

American Federation of Arts: Robert W. de Forest, 30 Broad Street, New York, N. Y.; Leila Mechlin, 1741 New York Avenue, Washington, D. C.; Washington, D. C., May, 1921.

American Federation of Teachers: Charles B. Stillman, 1620 Lake Avenue, Wilmette, Ill.; F. G. Stecker, 1618 Lake Avenue, Wilmette, Ill.; probably December, 1920.

American Federation of Teachers of the Mathematical and the Natural Sciences: C. R. Mann, 1506 Emerson Street, NW., Washington, D. C.; William A. Hedrick, Central High School, Washington, D. C.; Chicago, Ill., December 28, 1920.

American Home Economics Association: Mary E. Sweeney, University of Kentucky, Lexington, Ky.; Lenna F. Cooper, Battle Creek Sanitarium, Battle Creek, Mich.

American Humane Education Society: Francis H. Rowley, 180 Longwood Avenue, Boston, Mass.; Guy Richardson, 180 Longwood Avenue, Boston, Mass.

American Institute of Dental Teachers: Arthur D. Black, 122 South Michigan Avenue, Chicago, Ill.; Abram Hoffman, 381 Linwood Avenue, Buffalo, N. Y.; Indianapolis, Ind., January 24–26, 1921.

American Medical Association, Council on Medical Education and Hospitals: Arthur D. Bevan, 122 South Michigan Avenue, Chicago, Ill.; N. P. Colwell, 535 North Dearborn Street, Chicago, Ill.; Chicago, Ill., March 7–9, 1921.

American Nature-Study Society: J. Andrew Drushel, Harris Teachers College, St. Louis, Mo.; Anna B. Comstock, Cornell University, Ithaca, N. Y.

American Physical Education Association: Dudley B. Reed, University of Chicago, Chicago, Ill.; J. H. McCurdy, 93 Westford Avenue, Springfield, Mass.; San Francisco, Calif., 1921.

American Posture League: Jessie H. Bancroft, 164 Sterling Place, Brooklyn, N. Y.; Henry Ling Taylor, 125 West Fifty-eighth Street, New York, N. Y.; New York, N. Y., March 12, 1921.

American School Citizenship League: Randall J. Condon, Cincinnati, Ohio; Mrs. Fannie Fern Andrews, 405 Marlborough Street, Boston 17, Mass.; July, 1921, with the National Education Association.

American School Hygiene Association: William A. Howe, Albany, N. Y.; Harry B. Burns, Board of Education, Pittsburgh, Pa.; Atlantic City, N. J., with the Department of Superintendence, National Education Association.

American Society for the Extension of University Teaching: S. Burns Weston, 1324 Spruce Street, Philadelphia, Pa.; William K. Huff, 730 Witherspoon Building, Philadelphia, Pa.; Philadelphia, Pa.

Army Educational Corps, A. E. F., Alumni Association: Frank E. Spaulding, Yale University, New Haven, Conn.; George F. James, 210 Mollers Building, Chicago, Ill.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

Associated Harvard Clubs: John W. Prentiss, 42 Broadway, New York, N. Y.; H. C. Washburn, 150 Nassau Street, New York, N. Y.; Milwaukee, Wis., probably July, 1921.

Association of Alumni Secretaries: Lewis D. Crenshaw, University, Va.; W. R. Okeson, Lehigh University, South Bethlehem, Pa.

Association of American Colleges: Frederick C. Ferry, Hamilton College, Clinton, N. Y.; R. M. Hughes, Miami University, Oxford, Ohio; New York, N. Y., January, 1921.

Association of American Instructors of the Deaf: Percival Hall, Gallaudet College, Washington, D. C.; Ignatius Bjorlee, Frederick, Md.; 1923.

Association of American Law Schools: E. A. Gilmore, University of Wisconsin, Madison, Wis.; H. C. Jones, University of West Virginia, Morgantown, W. Va.; Chicago, Ill., December 28–30, 1920.

Association of American Library Schools: Josephine A. Rathbone, Pratt Institute Library School, Brooklyn, N. Y.; Florence R. Curtis, University of Illinois Library School, Urbana, Ill.; probably Chicago, Ill., Christmas holidays, 1920.

Association of American Medical Colleges: William Pepper, University of Pennsylvania, Philadelphia, Pa.; Fred C. Zapffe, 3431 Lexington Street, Chicago, Ill.; Chicago, Ill., March, 1921.

Association of American Universities: Representative of University of Kansas, Lawrence, Kans.; David A. Robertson, University of Chicago, Chicago, Ill.

Association of Biblical Instructors in American Colleges and Secondary Schools: Charles F. Kent, Yale University, New Haven, Conn.; Raymond C. Knox, Columbia University, New York, N. Y.; Pottstown, Pa., probably December 28–29, 1920.

Association of Business Officers of the Universities and Colleges of the Middle West: U. H. Smith, Indiana University, Bloomington, Ind.; W. H. Bates, University of Iowa, Iowa City, Iowa; Iowa City, Iowa, about May 20, 1921.

Association of Church Directors of Religious Education: George Yaple, 10 Blaine Avenue, Detroit, Mich.; Mary Lawrance, Auburndale, Mass.; March, 1921.

Association of Colleges and Preparatory Schools of the Middle States and Maryland: William W. Guth, Goucher College, Baltimore, Md.; George W. McClelland, University of Pennsylvania, Philadelphia, Pa.

Association of Colleges and Secondary Schools of the Southern States: Julius Wright, University School, Mobile, Ala.; Edward A. Bechtel, Tulane University, New Orleans, La.; Chattanooga, Tenn., about November 29, 1920.

Association of Colleges for Negro Youth: C. H. Maxson, Bishop College, Marshall, Tex.; J. T. Cater, Talladega College, Talladega, Ala.; November, 1920.

Association of Collegiate Alumnae: Mrs. Marvin B. Rosenberry, 1717 Kendall Avenue, Madison, Wis.; Mrs. Gertrude S. Martin, 934 Stewart Avenue, Ithaca, N. Y.; Washington, D. C., March 28 to April 1, 1921.

Association of Collegiate Schools of Architecture: Warren Powers Laird, University of Pennsylvania, Philadelphia, Pa.; Clarence A. Martin, Cornell University, Ithaca, N. Y.

Association of Collegiate Schools of Business: Leon C. Marshall, University of Chicago, Chicago, Ill.; Morton A. Aldrich, Tulane University, New Orleans, La.

Association of Directors of Physical Education for Women: Rachel L. Hardwick, 688 Boylston Street, Boston, Mass.; Katherine Sibley, 121 College Place, Syracuse, N. Y.; Poughkeepsie, N. Y., March or April, 1921.

Association of Friends' Schools: J. L. Lippincott, Riverton, N. J.; Ada Maule, Fifteenth and Race Elementary School, Philadelphia, Pa.

Association of History Teachers of the Middle States and Maryland: Albert K. Heckel, Lafayette College, Easton, Pa.; Nellie P. Ferry, 4818 Warrington Avenue, Philadelphia, Pa.

Association of Institutions Giving Normal Instruction in Physical Education: C. Ward Crampton, Battle Creek, Mich.; Mrs. F. O. Hester, 6111 Greenwood Avenue, Chicago, Ill.; New York, N. Y., December 29, 1920.

Association of Junior Colleges: David McKenzie, Detroit Junior College, Detroit, Mich.; Martha MacKenzie Reid, William Woods College, Fulton, Mo.; Chicago, Ill., February 18-19, 1921.

Association of Land Grant Colleges: H. L. Russell, University of Wisconsin, Madison, Wis.; J. L. Hills, University of Vermont, Burlington, Vt.

Association of Military Colleges and Schools: Gen. E. W. Nichols; Col. R. P. Davidson, Lake Geneva, Wis.; Washington, D. C., 1921.

Association of Modern Language Teachers of the Central West and South: E. W. Olmsted, University of Minnesota, Minneapolis, Minn.; C. H. Handschin, Miami University, Oxford, Ohio; Chicago, Ill., April or May, 1921.

Association of Modern Language Teachers of the Middle States and Maryland: J. P. W. Crawford, University of Pennsylvania, Philadelphia, Pa.; Anna W. Ballard, Columbia University, New York, N. Y.

Association of Presidents and Past Presidents of State and National Music Teachers' Associations: William F. Bentley, Galesburg, Ill.; Secretaryship vacant; Chicago, Ill., December, 1920.

Association of Schools, Colleges, and Seminaries of the Reformed Church: Henry H. Apple, Lancaster, Pa., George L. Omwake, Ursinus College, Collegeville, Pa.

Association of Teachers of Mathematics in New England: William R. Ransom, Tufts College, Mass.; H. D. Gaylord, 448 Audubon Road, Boston, Mass.; Boston, Mass., December 4, 1920.

Association of Teachers of Mathematics in the Middle States and Maryland: William E. Breckenridge, Stuyvesant High School, New York, N. Y.; C. B. Walsh, Friends' Central School, Philadelphia, Pa.

Association of Urban Universities: Frederic A. Hall, Washington University, St. Louis, Mo.; Frederick B. Robinson, College of the City of New York, New York, N. Y.; Philadelphia, Pa., November 15-17, 1920.

Bi-State Educational Club: Chairman, R. H. Jordan, Dartmouth College, Hanover, N. H.; T. E. Bacon, High School, Hanover, N. H.; White River Jct, Vt., January 22, 1921.

Catholic Educational Association: Thomas J. Shahan, Catholic University of America, Washington, D. C., Francis W. Howard, 1651 East Main Street, Columbus, Ohio; probably June, 1921.

Central Association of Science and Mathematics Teachers: J. A. Foberg, Crane Technical High School, Chicago, Ill.; Harry O. Gillet, University of Chicago, Chicago, Ill.; Chicago, Ill., November 26-27, 1920.

Central Commercial Teachers' Association: Mary S. Horner, Waterloo, Iowa; Carrie M. Bell, Des Moines, Iowa; Fort Dodge, Iowa, 1921.

Classical Association of New England: Frank Cole Babbitt, Trinity College, Hartford, Conn.; acting secretary, John S. Galbraith, Williams College, Williamstown, Mass.; Providence, R. I., probably April, 1921.

Classical Association of the Atlantic States: David M. Robinson, Johns Hopkins University, Baltimore, Md.; Charles Knapp, Barnard College, New York, N. Y.; April or May, 1921.

Classical Association of the Middle West and South: R. B. Steele, Vanderbilt University, Nashville, Tenn.; Rollin H. Tanner, Denison University, Granville, Ohio; St. Louis, Mo., March 24-26, 1921.

Classical Association of the Pacific States, Northern Section: William E. Kirk, 1450 State Street, Salem, Oreg.; Julianne A. Roller, Franklin High School, Portland, Oreg.; Portland, Oreg., probably December 29-31, 1920.

College Art Association of America: David M. Robinson, Johns Hopkins University, Baltimore, Md.; John Shapley, Brown University, Providence, R. I.; Washington, D. C., March 24-26, 1921.

College Conference on English in the Central Atlantic States: H. R. Steeves, Columbia University, New York, N. Y.; W. O. Sypherd, Delaware College, Newark, Del.; Baltimore, Md., November 27, 1920.

College Entrance Examination Board: Howard McClenahan, Princeton University, Princeton, N. J.; Thomas S. Fiske, 431 West One hundred and seventeenth Street, New York, N. Y.; New York, N. Y., November 6, 1920.

Committee of Fifteen on Educational Preparation for Foreign Service (with Advisory Council): Glen Levin Swiggett, Bureau of Education, Washington, D. C.

Committee on Friendly Relations among Foreign Students: Secretary, Charles D. Hurrey, 347 Madison Avenue, New York, N. Y.

Conference of Church Workers in Universities: William Houston, Ohio State University, Columbus, Ohio; Vernon S. Phillips, Ohio State University, Columbus, Ohio.

Conference of Colleges of the Interior: W. H. Rollins, Fairmount College, Wichita, Kans.; Frank G. Ward, 5757 University Avenue, Chicago, Ill.; Chicago, Ill., January, 1921.

Conference of Superintendents and Principals of Schools for the Deaf in the United States and Canada: Percival Hall, Gallaudet College, Washington, D. C.; Ignatius Bjorlee, Frederick, Md.; June, 1923.

Corda Fratres Association of Cosmopolitan Clubs: J. A. C. Hildner, 1125 Fair Oaks Parkway, Ann Arbor, Mich.; Harold J. Leonard, 515 Syndicate Building, Minneapolis, Minn.; Ann Arbor, Mich., December 28-30, 1920.

Council on Management Education: Chairman, Hollis Godfrey, Drexel Institute, Philadelphia, Pa.

Drama League of America: John M. Stahl, 3401 South Michigan Avenue, Chicago, Ill.; Alice M. Houston, 1426 Forest Avenue, Evanston, Ill.

Eastern Arts Association: Ernest Watson, Pratt Institute, Brooklyn, N. Y.; Merritt W. Haynes, Bayonne, N. J.; Baltimore, Md., probably April, 1921.

Eastern Association of Physics Teachers: Charles E. Stratton, Mechanic Arts High School, Boston, Mass.; Kurt G. Busiek, 213 Savin Hill Avenue, Boston, Mass.

Eastern Commercial Teachers Association: F. G. Nichols, Federal Board for Vocational Education, Washington, D. C.; D. A. McMillin, Central High School, Newark, N. J.; New York, N. Y., March 24-26, 1921.

Eastern Music Supervisors' Conference: George H. Gartlan, Board of Education, New York, N. Y.; Laura Bryant, Ithaca, N. Y.

Educational Aid Society: Harry J. Myers, 122 South Michigan Avenue, Chicago, Ill.; Leila E. Peterson, 3726 Herndon Street, Chicago, Ill., January 10, 1921.

Educational Association of College Presidents of the Methodist Episcopal Church: L. H. Murlin, Boston University, Boston, Mass.; R. J. Trevorrow, Hackettstown, N. J.; probably January, 1921.

Educational Press Association of America: Henry G. Williams, Columbus, Ohio; George L. Towne, 1126 Q Street, Lincoln, Nebr.; Atlantic City, N. J., with the Department of Superintendence, National Education Association.

Farmers' Educational Cooperative Union: C. S. Barrett, Union City, Ga.; A. C. Davis, Gravette, Ark.; Kansas City, Mo., November 16-18, 1920.

Federation for American Childhood: President, Louis W. Rapeer, 20 Jackson Place, Washington, D. C.; December, 1920.

Federation for Child Study: President, Mrs. Howard S. Gans, 260 West Seventy-sixth Street, New York, N. Y.; New York, N. Y., November 3, 1920.

Head Masters' Association: William M. Irvine, Mercersburg, Pa.; William B. Snow, English High School, Boston, Mass.; New York, N. Y., February, 1921.

Head Mistresses Association of the Middle West: Mrs. Arthur Lyman, Laurel School, Cleveland, Ohio; Mary E. Raymond, Hathaway Brown School, Cleveland, Ohio; Toledo, Ohio, probably October, 1920.

Inland Empire Council of Teachers of English: O. B. Sperlin, Tacoma, Wash.; Pearl E. Anderson, Spokane, Wash.; Spokane, Wash., April 3-6, 1921.

Inland Empire Teacher's Association: Q. C. Pratt, Spokane, Wash.; J. A. Burke, Spokane, Wash.; Spokane, Wash., March 30 to April 1, 1921.

Intercollegiate Vocational Guidance Association: Catherine Filene, 1 West Hill Place, Boston, Mass.; Ethel M. Baker, 1 West Hill Place, Boston, Mass.; Columbus, Ohio, March, 1921.

Lake Mohonk Indian Conference: Secretary, H. C. Phillips, Mohonk Lake, N. Y.

Middle West Society of Physical Education and Hygiene: C. W. Savage, Oberlin College, Oberlin, Ohio; Louise Kent Hale, Cleveland Heights High School, Cleveland, Ohio; probably Cleveland, Ohio, April, 1921.

Missionary Education Movement of the United States and Canada: Samuel Thorne, jr., 27 Cedar Street, New York, N. Y.; F. C. Stevenson, 299 Queen Street, Toronto, Canada.

Mississippi Valley Historical Association, Teachers' Section: J. R. H. Moore, Indianapolis, Ind.; Howard C. Hill, University of Chicago, Chicago, Ill.; May, 1921.

Missouri Valley Commercial Teachers' Association: L. E. Ferry, Central High School, Kansas City, Mo.; Laura Straley, Topeka Business College, Topeka, Kans.; St. Joseph, Mo., November 26-27, 1920.

Music Teachers' National Association: Peter C. Lutkin, Northwestern University, Evanston, Ill.; R. G. McCutchan, Depauw University, Greencastle, Ind.; Chicago, Ill., December 29-31, 1920.

National Academy of Visual Instruction: William H. Dudley, University of Wisconsin, Madison, Wis.; J. H. Wilson, Board of Education, Detroit, Mich.

National Associated Schools of Scientific Business: Woodbridge N. Ferris, Big Rapids, Mich.; B. S. Travis, Big Rapids, Mich.

National Association for the Study and Education of Exceptional Children: Samuel D. Levy, Children's Court, New York, N. Y.; W. F. Blake-Burke, 543 West Seventh Street, Plainfield, N. J.

National Association of Accredited Commercial Schools: B. F. Williams, Des Moines, Iowa; H. E. V. Porter, Jamestown, N. Y.; Cleveland, Ohio, December 27, 1920.

National Association of Corporation Training: L. L. Park, Schenectady, N. Y.; F. C. Henderschott, 130 East Fifteenth Street, New York, N. Y.; June, 1921.

National Association of Dental Faculties: William Car, 35 West Forty-sixth Street, New York, N. Y.; Delas Hill, Grant Boulevard, Atlanta, Ga.; Milwaukee, Wis., August, 1921.

National Association of Directors of Educational Research: M. E. Haggerty, University of Minnesota, Minneapolis, Minn.; E. J. Ashbaugh, University of Iowa, Iowa City, Iowa; Atlantic City, N. J., February 24, 1921.

National Association of Directors of Supervised Student Teaching: A. R. Mead, Delaware, Ohio; Robert A. Cummins, State Normal School, Natchitoches, La.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Association of High School Supervisors and Inspectors: John E. Foster, Des Moines, Iowa; J. J. Didcoct, George Peabody College for Teachers, Nashville, Tenn.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Association of Penmanship Supervisors: C. A. Barnett, Cleveland, Ohio; Chicago, Ill., December, 1920.

National Association of School Accounting and Business Officials of Public Schools: George F. Womrath, 305 City Hall, Minneapolis, Minn.; Arthur Kinkade, High School Building, Decatur, Ill.; Detroit, Mich., May 17–20, 1921.

National Association of School Building Officials: C. W. Handman, 511 West Court Street, Cincinnati, Ohio; R. M. Milligan, Board of Education, St. Louis, Mo.; Kansas City, Mo., November 15, 1920.

National Association of Secondary School Principals: Edmund D. Lyon, East Side High School, Cincinnati, Ohio; H. V. Church, High School, Cicero, Ill.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Association of State Supervisors and Inspectors of Rural Schools: P. C. Swain, Cedar Falls, Iowa; Florence Hale, Augusta, Me.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Association of State Universities in the United States of America: Edward A. Birge, University of Wisconsin, Madison, Wis.; Frank L. McVey, University of Kentucky, Lexington, Ky.

National Association of Teacher's Agencies: C. W. Mulford, Schermerhorn Teachers' Agency, New York, N. Y.; C. Wilbur Cary, Cary Teachers' Agency, Hartford, Conn.; Atlantic City, N. J., February 27, 1921.

National Association of Teachers in Colored Schools: L. J. Rowan, Alcorn, Miss.; Silas X. Floyd, 1025 Twelfth Street, Augusta, Ga.; Oklahoma City, Okla., July 27–29, 1921.

National Association of Teachers of Speech: Charles H. Woolbert, Urbana, Ill.; Bess Baker Pierce, 1422 Columbia Road, Washington, D. C.; Cleveland, Ohio, December 29–31, 1920.

National Association of Visiting Teachers: Jane Culbert, 8 West Fortieth Street, New York, N. Y.; Emma G. Case, 407 Municipal Building, Rochester, N. Y.; probably June or July, 1921.

National Child Labor Committee: Felix Adler, 33 Central Park West, New York, N. Y.; Owen R. Lovejoy, 105 East Twenty-second Street, New York, N. Y.; Milwaukee, Wis., June, 1921.

National Collegiate Athletic Association: Palmer E. Pierce, Philadelphia, Pa.; Frank W. Nicolson, Wesleyan University, Middletown, Conn.; Chicago, Ill., Christmas Holidays, 1920.

National Commercial Teachers' Federation: J. S. Dickey, Bowling Green, Ky.; Otis L. Trenary, Kenosha, Wis.; Cleveland, Ohio, December 28–31, 1920.

National Committee for Chamber of Commerce Cooperation with the Public Schools: G. D. Strayer, Columbia University, New York, N. Y.; F. A. Richardson, American City Bureau, Tribune Building, New York, N. Y.

National Committee for the Teaching of Citizenship: Thomas M. Balliet, Washington, D. C.; Harry H. Moore, 3421 Lowell Street, N.W., Washington, D. C.

National Committee on Mathematical Requirements: J. W. Young, 24 Musgrove Building, Hanover, N. H.; J. A. Foberg, 3829 North Tripp Avenue, Chicago, Ill.

National Community Center Association: Mrs. Louis D. Brandeis, Stoneleigh Court, Washington, D. C.; Eugene C. Gibney, Board of Education, New York, N. Y.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Conference Committee on Standards of Colleges and Secondary Schools: George D. Olds, Amherst College, Amherst, Mass.; Frank W. Nicolson, Wesleyan University, Middletown, Conn.; New York, N. Y., March, 1921.

National Conference of Deans of Women: Mina L. Kerr, Milwaukee Downer College, Milwaukee, Wis.; Katherine Alvord, Depauw University, Greencastle, Ind.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Conference of Music Supervisors: J. W. Beattie, Grand Rapids, Mich.; E. Jane Wisenall, Woodward High School, Cincinnati, Ohio; St. Joseph, Mo., April 4–8, 1921.

National Conference on the Education of Truant, Backward, Dependent, and Delinquent Children: Joseph M. Frost, Industrial School for Boys, Lansing, Mich.; Hobart H. Todd, Agricultural and Industrial School, Industry, N. Y.

National Council of Administrative Women in Education: Mary D. Bradford, Kenosha, Wis.; Elvina D. Cabell, 5623 Blackstone Avenue, Chicago, Ill.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Council of Geography Teachers: Ray H. Whitbeck, University of Wisconsin, Madison, Wis.; George J. Miller, State Normal School, Mankato, Minn.; Chicago, Ill., December 29, 1920.

National Council of Normal School Presidents and Principals: J. A. H. Keith, Indiana, Pa.; C. H. Cooper, Mankato, Minn.; Washington, D. C., about February 25, 1921.

National Council of Primary Education: Chairman, Ella Victoria Dobbs, 1211 University Avenue, Columbia, Mo.; Atlantic City, N. J., February, 1921, with the Department of Superintandence, National Education Association.

National Council of Teachers in Day Schools for the Deaf: Frances Wettstein, 224 Thirty-fourth Street, Milwaukee, Wis.; Clara Newlee, Parker Practice School, Chicago, Ill.; with National Education Association, July, 1921.

National Council of Teachers of English: James F. Hosic, Chicago Normal College, Chicago, Ill.; W. Wilbur Hatfield, Chicago Normal College, Chicago, Ill.; Chicago, Ill., November 25–27, 1920.

National Education Association: Fred M. Hunter, Oakland, Calif.; J. W. Crabtree, 1201 Sixteenth Street, NW., Washington, D. C.; Des Moines, Iowa, July, 1921.

National Education Association, Department of Superintendence: Calvin N. Kendall, Trenton, N. J.; Belle M. Ryan, Omaha, Nebr.; Atlantic City, N. J., February 28 to March 3, 1921.

National Education Association, National Council of Education: Homer H. Seerley, State Teachers' College, Cedar Falls, Iowa; Adelaide S. Baylor, 200 New Jersey Avenue, NW., Washington, D. C., Atlantic City, N. J., February 28 to March 3, 1921.

National Educators' Conservation Society: Charles L. Bristol, New York University, New York, N. Y.; Nomer Gray, 1013 Prospect Place, Brooklyn, N. Y.; New York, N. Y., January 15, 1921.

National Federation of College Women: Myra K. Miller, Hotel Commodore, New York, N. Y.; Mrs. Flora W. Seymour, 5547 Dorchester Avenue, Chicago, Ill.; Fall, 1921.

National Federation of Modern Language Teachers: W. B. Snow, English High School, Boston, Mass.; C. H. Handschin, Miami University, Oxford, Ohio.

National Federation of State Education Associations: Charles S. Foos, Reading, Pa.; John P. Everett, Kalamazoo, Mich.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Kindergarten Association: Bradley Martin, 8 West Fortieth Street, New York, N. Y.; Bessie Locke, 8 West Fortieth Street, New York, N. Y.; New York, N. Y., November, 1920.

National League of Compulsory Education Officials: Henry J. Gideon, 1522 Cherry Street, Philadelphia, Pa.; Arthur F. Lederle, 133 East Grand River Avenue, Detroit, Mich.; Detroit, Mich., November 9–12, 1921.

National League of Nursing Education: Anna C. Jammé, 213 Lachman Building, San Francisco, Calif.; Alice H. Flash, Lettermans General Hospital, San Francisco, Calif.; Kansas City, Mo., April, 1921.

National League of Teacher-Mothers: Ella Frances Lynch, Bryn Mawr, Pa.; Caroline Katzenstein, 4322 Chestnut Street, Philadelphia, Pa.

National League of Teachers Associations: Nina O. Buchanan, Hotel Butler, Seattle, Wash.; Nellie B. Sterrett, Grade Teachers Club, Seattle, Wash.; July, 1921, with the National Education Association.

National Research Council, Division of Educational Relations: Vernon Kellogg, 1701 Massachusetts Avenue, Washington, D. C.; Albert L. Barrows, 1701 Massachusetts Avenue, Washington, D. C.

National Round Table for Speech Improvement: Frederick Martin, Board of Education, New York, N. Y.; Raymond Kellogg, Morris High School, New York, N. Y.

National Society for Broader Education: Guy Carleton Lee, 55 West Forty-fourth Street, New York, N. Y.; H. H. Langsdorf, 168 West High Street, Carlisle, Pa.; New York, N. Y., January 7, 1921.

National Society for the Study and Correction of Speech Disorders: Walter B. Swift, 110 Bay State Road, Boston, Mass.; M. F. Franklin, 110 Bay State Road, Boston, Mass.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Society for the Study of Education: H. B. Wilson, Berkeley, Calif.; Guy M. Whipple, Ann Arbor, Mich.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Society for Vocational Education: William J. Bogan, Lane Technical School, Chicago, Ill.; Clotilde Ware, 140 West Forty-second Street, New York, N. Y.; Atlantic City, N. J., February 24-26, 1921.

National Society of College Teachers of Education: Frank T. Kelly, University of Kansas, Lawrence, Kans.; Florence E. Bamberger, Johns Hopkins University, Baltimore, Md.; Atlantic City, N. J., February, 1921, with the Department of Superintendence, National Education Association.

National Speech Arts Association: Charles M. Holt, Minneapolis, Minn.; Jessie E. Tharp, New Orleans, La.; June 1921.

National Story Tellers League: Mary E. Hargreaves, 1603 South Wabash Avenue, Chicago, Ill.; Mrs. Edward F. Leonard, 1349 Grace Street, Chicago, Ill.; 1924.

National University Extension Association: J. J. Pettijohn, Indiana University, Bloomington, Ind.; A. J. Klein, Camp Grant, Rockford, Ill.; Ames, Iowa, April, 1921.

National Vocational Guidance Association: John M. Brewer, Harvard University, Cambridge, Mass.; Russel H. Allen, 261 Broadway, New York, N. Y.; with the National Education Association.

New England Association of Chemistry Teachers: W. W. Obear, High School, Somerville, Mass.; S. W. Hoyt, Mechanic Arts High School, Boston, Mass.; Boston, Mass., November, 1920.

New England Association of College Teachers of Education: H. G. Townsend, Northampton, Mass.; Walter O. McIntire, Norton, Mass.; Boston, Mass., December 3, 1920.

New England Association of Colleges and Secondary Schools: L. H. Murlin, Boston University, Boston, Mass.; Walter Ballou Jacobs, Brown University, Providence, R. I.; Boston, Mass., December 3-4, 1920.

New England Association of School Libraries: Mary Davis, Brookline High School, Brookline, Mass.; Edith K. Coulman, High School, Quincy, Mass.; near Boston, Mass., May, 1921.

New England Association of School Superintendents: Henry H. Randall, Auburn, Me.; Willard H. Bacon, Westerly, R. I.

New England Association of Teachers of English: Frank Aydelotte, Massachusetts Institute of Technology, Cambridge, Mass.; A. Bertram de Mille, Milton, Mass.; Boston, Mass., December 4, 1920.

New England College Entrance Certificate Board: Arthur J. Roberts, Colby College, Waterville, Me.; Frank W. Nicolson, Wesleyan University, Middletown, Conn.; Boston, Mass., April, 1921.

New England Federation of High School Commercial Teachers: G. L. Hoffacker, Boston, Mass.; W. O. Holden, Pawtucket, R. I.; Boston, Mass., November 6, 1920.

New England History Teachers' Association: Harriet E. Tuell, High School, Somerville, Mass.; Horace Kidger, Technical High School, Newtonville, Mass.; November, 1920.

New England Home Economics Association: Antoinette Roof, Simmons College, Boston, Mass.; Mary B. Stocking, Simmons College, Boston, Mass.

New England Modern Language Association: Presidency vacant; Helen A. Stuart, Girls' Latin School, Boston, Mass.; Boston, Mass., May, 1921.

New England Penmanship Association: H. B. Cole, 114 Trent Street, Melrose, Mass.; Annie C. Woodward, 2 Madison Street, Somerville, Mass.

New England Vocational Guidance Association: Frederick J. Allen, Harvard University, Cambridge, Mass.; Lewis E. Maverick, Harvard University, Cambridge, Mass.

North Central Association of Colleges and Secondary Schools: George Edward Marshall, High School, Davenport, Iowa; H. M. Gage, Coe College, Cedar Rapids, Iowa; Chicago, Ill., March 17–19, 1921.

North Central Council of State Normal School Presidents: F. A. Cotton, La Crosse, Wis.; J. G. Crabbe, Greeley, Colo.

Northern Baptist Education Society: Austen K. de Blois, Beacon Street, Boston, Mass.; Robert Lee Webb, Newton Centre, Mass.; Worcester, Mass., October 25, 1921.

Northwest Association of Secondary and Higher Schools: Hopkins Jenkins, Portland, Oreg.; Phillip Soulen, Moscow, Idaho; Spokane, Wash., April 3, 1921.

Northwestern Association of History, Government and Economics Teachers: T. O. Ramsey, North Central High School, Spokane, Wash.; L. I. Jackson, Pullman, Wash.; North Yakima, Wash., October, 1920.

Playground and Recreation Association of America: Joseph Lee, 101 Tremont Street, Boston, Mass.; H. S. Braucher, 1 Madison Avenue, New York, N. Y.; New York, N. Y., May, 1921.

Presbyterian Educational Association of the South: Henry H. Sweets, 122 South Fourth Avenue, Louisville, Ky.; D. S. Gage, 410 Urban Building, Louisville, Ky.; Montreat, N. C., July, 1921.

Progressive Education Association: Arthur E. Morgan, Dayton, Ohio; Stanwood Cobb, 1607 Irving Street, NW., Washington, D. C.; April, 1921.

Religious Education Association: Arthur C. McGiffert, Broadway and One hundred and twentieth Street, New York, N. Y.; Henry F. Cope, 1440 East Fifty-seventh Street, Chicago, Ill.; March, 1921.

School Board Member's Association: Secretary, Henry S. Chapin, 23 Flatbrush Avenue, Brooklyn, N. Y.

School Garden Association of America:

Self-Government Committee, 2 Wall Street, New York, N. Y.: Chairman, Richard Welling; secretary, Frank Kiernan.

Société Nationale des Professeurs Français: Auguste George, 100 St. Nicholas Avenue, New York, N. Y.; Jean B. Zacharie, 9 Mitchell Place, New York, N. Y.

Society for the Promotion of Engineering Education: M. E. Cooley, University of Michigan, Ann Arbor, Mich.; F. L. Bishop, University of Pittsburgh, Pittsburgh, Pa.; New Haven, Conn., June 28, 1921.

Society for Visual Education: R. D. Salisbury, University of Chicago, Chicago, Ill.; F. R. Moulton, 327 South La Salle Street, Chicago, Ill.

Society of Directors of Physical Education in Colleges: Edwin Fauver, University of Rochester, Rochester, N. Y.; D. B. Reed, University of Chicago, Chicago, Ill.; probably Chicago, Ill., December, 1920.

Society of Progressive Oral Advocates: M. A. Goldstein, 3858 Westminster Place, St. Louis, Mo.; Mildred A. McGinnis, 818 South Kingshighway, St. Louis, Mo.; June, 1921.

Southern Association of College Women: Mary L. Harkness, Newcomb College, New Orleans, La.; Mrs. Charles Spencer, 700 Center Street, Birmingham, Ala.; probably April, 1921, with the Association of Collegiate Alumnae.

Southern Baptist Education Association: W. L. Poteat, Wake Forest, N. C.; Albert R. Bond, Birmingham, Ala.; Nashville, Tenn., January 27–30, 1921.

Southern Commission on Accredited Schools: Lloyd L. Friend, Charleston, W. Va.; Harry Clark, Knoxville, Tenn.

Southern Commission on Higher Institutions: Bert E. Young, Vanderbilt University, Nashville, Tenn.; Harry Campbell, Washington and Lee University, Lexington, Va.; with the Association of Colleges and Secondary Schools of the Southern States.

Southern Education Society: John P. McConnell, East Radford, Va.; A. P. Bourland, 1707 Kilbourne Place, Washington, D. C.

Southern Home Economics Association: Harriet Boyer, New Orleans, La.; Laura Neale, College Station, Tex.

Southern Industrial Education Association: C. C. Calhoun, Evans Building, Washington, D. C.; Augusta P. Stone, 1228 Connecticut Avenue, Washington, D. C.; Washington, D. C., November 29, 1920.

United States Bureau of Education Committee on Highway and Highway Transport Education: Chairman, P. P. Claxton, Bureau of Education, Washington, D. C.; Walton C. John, Bureau of Education, Washington, D. C.

Universal Military Training League: Howard K. Gross, 1322 First National Bank Building, Chicago, Ill.; H. K. Abbott, 1322 First National Bank Building, Chicago, Ill.

University Commission on Southern Race Questions: Josiah Morse, University of South Carolina, Columbia, S. C.; W. M. Hunley, Lexington, Va.; New York, N. Y., September 18, 1921.

Vocational Education Association of the Middle West: Edwin A. Lee, Indiana University, Bloomington, Ind.; Leonard W. Wahlstrom, 1711 Estes Avenue, Chicago, Ill.; Minneapolis, Minn., February 10–12, 1921.

Western Arts Association: Ruth Raymond, University of Minnesota, Minneapolis, Minn.; L. R. Abbott, 234 North Division Avenue, Grand Rapids, Mich.

Women's Educational and Industrial Union: Miss Marion Churchill, 264 Boylston Street, Boston, Mass.; Elizabeth W. Schermerhorn, 264 Boylston Street, Boston, Mass.

Women's Intercollegiate Association for Student Government: Representative of Elmira College, Elmira, N. Y.; Representative of Simmons College, Boston, Mass,; Elmira, N. Y., November, 1920.

Y. M. C. A. Educational Secretaries Association: Maynard L. Clements, Y. M. C. A., Baltimore, Md.; Ralph R. Blackney, Y. M. C. A., Buffalo, N. Y.; Lake Geneva, Wis., June 28 to July 2, 1921.

2. State.

Alabama:

- Alabama Educational Association: S. S. Murphy, Mobile; H. G. Dowling, Cullman.
- Alabama History Teachers' Association: D. G. Chase, Birmingham High School, Birmingham; T. P. Abernethy, Marion; probably Birmingham, April 1-3, 1921.
- Alabama Home Economics Association: Gail Burfield, Montevalla; Annie Kemp, Montevalla; Montevalla, about February 1, 1921.
- Alabama Sunday School Association: D. H. Marbury, Birmingham; J. B. Greene, Montgomery; Sheffield, April 26-28, 1921.
- Association of Alabama Colleges: William Bohannon, Howard College, Birmingham; James J. Doster, University; April, 1921.
- Association of English Teachers of Alabama: Mrs. Jessie D. Smith, Gadsden; Lucy Scarborough, Birmingham; probably Birmingham, Spring, 1921.

Arizona:

- Arizona State Teachers' Association: W. P. Bland, Globe; H. E. Hendrix, Mesa; Phoenix, December 29-30, 1920.

Arkansas:

- Arkansas State Teachers' Association: A. B. Hill, Little Rock; Annie Griffey, Little Rock; Little Rock, November 11-13, 1920.

California:

- California Council of Education: E. Morris Cox, City Hall, Oakland; Arthur H. Chamberlain, 452 Flood Building, San Francisco; April 9, 1921.
- California Federation of School Women's Clubs: Mrs. M. R. O'Neil, Sacramento; Mrs. I. M. C. Smith, Sacramento.
- California High School Teachers' Association: George C. Thompson, High School, Alameda; A. H. Chamberlain, 452 Flood Building, San Francisco; Berkeley, about July 1, 1921.
- California Music Teachers' Association: Mrs. Norton Jamison, 2024 South Hoover Street, Los Angeles; Z. Earl Meeker, 401 Mason Opera House, Los Angeles; Oakland or San Jose, July, 1921.
- California State Association of Teachers of English: Effie B. McFadden, State Normal School, San Francisco; Benjamin Weed, Mission High School, San Francisco; San Francisco, October 19-20, 1920.
- California Teachers' Association, Bay Section: Wl T. Helms, Richmond; Berkeley; W. L. Glascock, San Mateo.
- California Teachers' Association, Central Coast Section: R. L. Bard, San Luis Obispo; T. S. DeQuiddy, Watsonville.
- California Teachers' Association; Northern Section: Ella G. McCleery, 510 Twenty-first Street, Sacramento; Mrs. Minnie R. O'Neil, City Hall, Sacramento; Sacramento, October or November, 1921.
- California Teachers' Association, Southern Section: Carleton A. Wheeler, 451 North Hill Street, Los Angeles; A. E. Wilson, Los Angeles; Los Angeles, December 20-24, 1920.
- Central California Teachers' Association: President, Jerome O. Cross, Fresno.

Colorado:

- Colorado Education Association: Anna Laura Force, 216 Sherman Street, Denver; H. B. Smith, 532 Commonwealth Building, Denver; Grand Junction, November 2-5, 1920; Pueblo, November 4-6, 1920; Denver, November 4-6, 1920.

Connecticut:

- Connecticut Arts Association: Maude A. Simpson, Meriden; Rosemary Brady, 774 East Main Street, Meriden; Meriden, October, 1920.
- Connecticut Home Economics Association: Dorothy Buchley, Storrs; Annie I. Robertson, 219 Church Street, Hartford; New Haven, October, 1920.
- Connecticut State Teachers' Association: Stanley H. Holmes, New Britian; Samuel P. Willard, Colchester; Hartford, New Haven, New London, Norwalk, October 22, 1920.
- Connecticut Superintendents' Association of Public Schools: Elmer H. Havens, 905 Clinton Avenue, Bridgeport; Howard S. Challenger, 985 Noble Avenue, Bridgeport.
- Connecticut Trade Educators' Association: Frederick J. Trinder, Capitol, Hartford; Everett D. Packard, Box 392, Stamford; September, 1920.

District of Columbia:

- Administrative Women in Education of the District of Columbia: Jessie Burrell, Washington; Mary A. Dilger, 1211 Euclid Street NW., Washington.
- Federal Schoolmen's Club: Edward L. Parks, Howard University, Washington; Alvin W. Miller, Central High School, Washington; Washington, November 6, 1920.
- High School Teachers' Association of the District of Columbia: Harry English, Franklin School, Washington; Mrs. M. D. Merrill, Central High School, Washington.

District of Columbia—Continued.

Principals' Association of the Graded White Schools: Miss M. King, Webster School, Washington; Miss M. Dilger, Brightwood School, Washington; Washington, October, 1920.

School Club: G. David Houston, 1758 T Street, NW., Washington; Haley G. Douglass, 1732 Fifteenth Street NW., Washington; Washington, October 9, 1920.

Florida:

Florida Educational Association: B. B. Lane, Tallahassee; R. L. Turner, Inverness; Tallahassee, December 28-30, 1920.

Georgia:

Georgia County School Officials' Association: M. L. Brittain, Atlanta; M. L. Duggan, Clayton.

Georgia Educational Association: Katherine Dozier, Gainesville; H. D. Meyer, Athens; Atlanta, about May 1, 1921.

Georgia State High School Teachers' Association: Joseph S. Stewart, University of Georgia, Athens; W. P. Thomas, West Point; Athens, June, 1921.

Georgia State Teachers' Association: W. D. Thomas, State College, Savannah; Silas X. Floyd, 1025 Twelfth Street, Augusta; Waycross, November 26-27, 1920.

Idaho:

Idaho State Teachers' Association: Frank W. Simmonds, Lewiston; Mrs. Lucy B. Morton, Meridian; Boise, probably Christmas holidays, 1920.

Illinois:

Federation of Illinois Colleges: Joseph R. Harker, Illinois Woman's College, Jacksonville; E. E. Rall, North-Western College, Naperville; Eureka, April 25-26, 1921.

High School Conference, University of Illinois: Chairman of Conference Committee, H. A. Hollister, University of Illinois, Urbana; Urbana, November 18-20, 1920.

Illinois Association of Teachers of English: Florence Skeffington, Charleston; E. C. Baldwin, Urbana; Urbana, November, 1920.

Illinois City Superintendents' Association: John G. Friedmeyer, 227½ South Sixth Street, Springfield; Eleanor Matheny, Leland Office Building, Springfield; Springfield, October 5, 1920.

Illinois State Association of Elementary School Supervisors: Kate Sharrard, 413 Napoleon Avenue, Rockford; Mabel W. Shaw, 208 Buell Avenue, Joliet; Joliet, April 29-30, 1921.

Illinois State School Board Association: R. H. Brown, 114 North Church Street, Rockford; Mrs. G. A. Stover, 648 South Taylor Avenue, Oak Park; Moline, October 28-29, 1920.

Illinois State Teachers' Association: Walter Potts, East St. Louis; Robert C. Moore, Carlinville; Springfield, December 29-31, 1920.

Schoolmasters' Club of Illinois: E. H. Turner, Normal University, Normal; Anthony Middleton, 221 Arthur Avenue., Peoria; Peoria, October 8-9, 1920.

Indiana:

Indiana Association of Psychology and Education: O. H. Williams, 227 State House, Indianapolis; Mrs. Frances M. Kelsey, Teachers College, Indianapolis; Indianapolis, October 20, 1921.

Indiana Association of Teachers of English: Lucian G. Hickman, Bloomington; Flora C. Broaddus, Richmond; Indianapolis, October, 1920.

Indiana City and Town Superintendents' Association: Owen J. Neighbors, Wabash; W. C. Goble, Swayzee; Indianapolis, January, 1921.

Indiana History Teachers' Association: Oscar Williams, State House, Indianapolis; E. A. Rice, Shortridge High School, Indianapolis; Indianapolis, October, 1920.

Indiana Home Economics Association: Mrs. Lawrence Foster, Crawfordsville; Florence Boston, Purdue University, Lafayette; Lafayette, January, 1921.

Indiana Music Teachers' Association: Ralph C. Sloane, Elkhart; A. Verne Westlake, Upland; Marion, April, 1921.

Indiana State Kindergarten Association: Eliza A. Blaker, Twenty-third and Alabama Streets, Indianapolis; Mary J. Africa, 2130 New Jersey Street, Indianapolis; Indianapolis, October 27, 1920.

Indiana State Teachers' Association: Mrs. E. E. Olcott, North Vernon; Charles O. Williams, Richmond; Indianapolis, October 21-23, 1920.

Indiana University, Conference on Educational Measurements (under direction of Bureau of Cooperative Research, Indiana University, Bloomington): Address Dean of School of Education, Bloomington; Meeting, Bloomington.

Iowa:

Iowa Association of Mathematics Teachers: W. J. Rusk, Grinnell College, Grinnell; Ira S. Condit, Iowa State Teachers College, Cedar Falls; Des Moines, November 5, 1920.

Iowa Association of Science Teachers: Allan Peterson, East High School, Des Moines; Frances Church, East High School, Des Moines; Des Moines, November 4, 1920.

Iowa Association of Teachers of English: D. D. Griffith, Grinnell; Juliette C. Devin, Oskaloosa; Des Moines, November 4-6, 1920.

Iowa Home Economics Association: Mrs. Myrtle G. Cole, Clinton; Caroline B. Smith, Iowa City.

Iowa Society of Social Science Teachers: Olynthus B. Clark, Drake University, Des Moines; Martha Hutchinson, 2912 University Avenue, Des Moines; Des Moines, November 4, 1920.

Iowa—Continued.

Iowa State Federation of Teachers' Clubs: Robert Corlett, Burlington; S. Adelia Winter, Fort Dodge; Des Moines, November, 5, 1920.

Iowa State Teachers' Association: Fred D. Cram, State Teachers' College, Cedar Falls; Charles F. Pye, 407 Youngerman Building, Des Moines; Des Moines, November 4–6, 1920.

Kansas:

Golden Belt Educational Association: Floyd B. Lee, Hays; Mrs. C. D. Connor, Russell; Hays, March 6–8, 1921.

Kansas Association of Mathematics Teachers: J. A. G. Shirk, Pittsburg; Edna E. Austin, Topeka; Topeka, January or February, 1921.

Kansas Association of Teachers of English: John McArthur, Manhattan; Ernnie Owen, Pittsburg; Independence, October 28–30, 1920.

Kansas History Teachers' Association: P. Williams, Emporia; Beulah Jevons, Wakefield; Topeka, November, 1920.

Kansas State Teachers' Association: W. A. Lewis, Hays; F. L. Pinet, 611–612 Mills Building, Topeka; Topeka, Independence, Hutchinson, and Hays, October 28–30, 1920.

Kentucky:

Association of Kentucky Colleges and Universities: Will B. Campbell, Kentucky Wesleyan College, Winchester; Frank L. Rainey, Centre College, Danville; Lexington, December 4, 1920.

Kentucky Educational Association: James H. Risley, Owensboro; R. E. Williams, 4518 South Parkway, Louisville; Louisville, April, 1921.

Kentucky Music Teachers' Association: Caroline Bourgard, 1151 East Broadway, Louisville; Flora M. Bertelle, 734 Fourth Avenue, Louisville; Louisville, April, 1921.

Louisiana:

Louisiana Council of Education: A. B. Dinwiddie, New Orleans; G. C. Huckaby, Baton Rouge; April, 1921.

Louisiana Professional Teachers' League: J. M. Smith, Vinton; P. H. Griffith, Baton Rouge.

Louisiana State Association of English Teachers: President, Albert G. Reed, Louisiana State University, Baton Rouge.

Louisiana Teachers' Association: A. J. Caldwell, Bastrop; L. J. Alleman, Natchitoches; New Orleans, April, 1921.

Maine:

Maine Teachers' Association: Richard J. Libby, Westbrook; Adelbert W. Gordan, State House, Augusta.

Maryland:

Maryland Council of Teachers of English: Andrew H. Krug, Baltimore City College, Baltimore; M. Lucetta Sisk, Roslyn; Baltimore, November, 1921.

Maryland History Teachers' Association: Lena C. Van Bibber, Maryland State Normal School, Towson; Laura J. Cairnes, Western High School, Baltimore.

Maryland State Teachers' Association: A. H. Krug, Baltimore City College, Baltimore; Hugh W. Caldwell, Chesapeake City.

Massachusetts:

Conference on Rural Education: William B. Aspinwall, State Normal School, Worcester; Horace G. Brown, State Normal School, Worcester; Worcester, March 18, 1921.

Harvard Teachers' Association: John W. Wood, 387 Harvard Street, Cambridge; Edwin A. Shaw, Kirkland Street, Cambridge; probably Springfield, December, 1920.

High School Masters Club of Massachusetts: Merle S. Getchell, High School, Brockton; John W. Hutchins, High School, Malden; Boston, March, 1921.

Massachusetts Public School Janitors Association: Edward A. Moore, Forest Hills, Boston; Wallace C. Tilton, 2 Tilton Street, New Bedford; Lynn, July, 1921.

Massachusetts Schoolmasters' Club: Harvey S. Gruver, Worcester; Leonard M. Patton, Milton; Boston, probably October 23, 1920.

Massachusetts State Normal School Teachers' Association: J. Asbury Pitman, Salem; M. Harriet Bishop, State Normal School, Worcester.

Massachusetts State Superintendents' Association: E. F. Howard, East Northfield; E. L. Haynes, Methuen; probably Boston, October, 1920.

Massachusetts Teachers' Federation: Mary McSkimmon, 20 Clinton Road, Brookline; Ernst Makechnie, 238 Elm Street, Somerville; Cambridge, October 16, 1920.

Tufts College Teachers' Association: Herbert V. Neal, Tufts College; J. Louis C. Keegen, Tufts College; Tufts College, October or November, 1920.

Michigan:

Conference on Educational Measurements (Department of Cooperative Research, Detroit, Mich.): Burton A. Barnes, 50 Broadway, Detroit; George Birkam, 982 Hurlbut Avenue, Detroit; Detroit, May, 1921.

Michigan Association of School Superintendents and School Board Members: E. E. Fell, Holland; H. C. Daley, Highland Park; Ann Arbor, probably March 28–29, 1921.

Michigan Schoolmasters' Club: William E. Praeger, Kalamazoo College, Kalamazoo; Louis P. Jocelyn, 545 South Division Street, Ann Arbor; Ann Arbor, March 31 to April 1, 1921.

Michigan—Continued.

Michigan State Federation of Teachers' Clubs: Syra Smith, Jackson; Oscar Trumble, Jackson; Saginaw, October 30, 1920.

Michigan State Home Economics Association: Lenna Cooper, Sanitarium, Battle Creek; Margaret Hall, Sanitarium, Battle Creek; Grand Rapids, October 29, 1920.

Michigan State Teachers' Association: Charles L. Poor, Traverse City; John P. Everett, Kalamazoo.

Upper Peninsula Educational Association: E. J. Williams, Gladstone; Gilbert L. Brown, Marquette.

Minnesota:

Minnesota Educational Association: L. D. Coffman, University of Minnesota, Minneapolis; W. H. Shephard, 1115 Thomas Avenue, North, Minneapolis; St. Paul, November 3–6, 1920.

Minnesota Educational Association of School Board Members: Mrs. H. Witherstine, Rochester; Victor E. Anderson, Wheaton; St. Paul, November 3–6, 1920.

Minnesota Music Teachers' Association: Elsie M. Shawe, 62 South Dale Street, St. Paul; Jessie Young, 730 Laurel Avenue, St. Paul; probably Duluth, June 28–30, 1921.

Scandinavian Language Teachers' Association: J. T. Sellin, 619 Washington Avenue, S. E., Minneapolis; Ebba Norman, South High School, Minneapolis; Minneapolis, October, 1920.

Mississippi:

Mississippi Classical Association: President, R. L. Watkins, Laurel; meets with the Mississippi Teachers' Association.

Mississippi Teachers' Association: John Rundle, Grenada; H. L. McCleskey, Normal College, Hattiesburg.

Missouri:

Missouri College Union: William F. Robison, St. Louis University, St. Louis; T. Berry Smith, Central College, Fayette; probably Kansas City, November, 1920.

Missouri Society of Teachers of English: George Melcher, Kansas City; E. M. Carter, Columbia; Kansas City, November 11-13, 1920.

Missouri Society of Teachers of History and Government: Laura Runyon, Warrensburg; J. E. Wrench, Columbia; Kansas City, November 5, 1920.

Missouri Society of Teachers of Mathematics and Science: J. L. Laughlin, Kansas City; Alfred Davis, Soldan High School, St. Louis; Kansas City, about November 10, 1920.

Missouri State Negro Teachers' Association: C. G. Williams, Booneville; A. C. Macklin, Hannibal.

Missouri State Teachers' Association: George Melcher, Board of Education, Kansas City; E. M. Carter, Columbia; Kansas City, November 11-13, 1920.

Montana:

Montana State Council of English Teachers: Ellen M. Guyer, State University, Missoula; Miss Margaret Ronan, High School, Missoula; Billings, November 22–24, 1920.

Montana State Teachers' Association: F. L. Cummings, Lewistown; S. L. Peterson, State Capitol, Helena; Billings, November 22-24, 1920.

Nebraska:

Nebraska History Teachers' Association: Edith Field, Central High School, Omaha; Margaret Davis, 1712 E Street, Lincoln; Omaha, November, 1920.

Nebraska Home Economics Association: Mrs. W. W. Bun, 1300 North Thirty-seventh Street, Lincoln; Mary E. Brown, 3321 R Street, Lincoln; Lincoln, January, 1921.

Nebraska Music Teachers' Association: Newton M. Boggess, Fremont; Albert G. Carlson, 628 East Twelfth Street, Fremont; Fremont, probably April, 1921.

Nebraska Schoolmasters' Club: George W. Martin, Kearney; H. E. Bradford, Lincoln; Lincoln.

Nebraska State Teachers' Association: A. J. Stoddard, Beatrice; H. O. Sutton, Kearney; Omaha, November 3–5, 1920.

Nebraska Women's Educational Club: Elizabeth Shaffer, Commercial High School, Omaha; Jennie B. Adams, 931 D Street, Lincoln; probably November, 1920.

Nevada:

Nevada State Educational Association: B. D. Billinghurst, Reno; Maude Frazier, Sparks; Reno, December, 1920.

New Hampshire:

New Hampshire Practical Arts Club: Walter A. Pierce, 104 Elm Street Claremont; Josephine Emery, Tilton; probably Concord, October 22, 1920.

New Hampshire State Teachers' Association: Catherine A. Dole, Lebanon; Caroline Head, 93 Liberty Street, Manchester; week of October 20, 1921.

New Jersey:

Association of Teachers of English of New Jersey: Charles T. Whitman, Rutgers College, New Brunswick; Mabel A. Tuttle, Linden High School, Linden; New Brunswick, October 30, 1920.

Council of Education of the State of New Jersey: William A. Wetzel, High School, Trenton; J. Howard Hulsart, Dover; October 22–23, 1920.

New Jersey Physical Education Association: Randall D. Warden, City Hall, Newark; F. W. Maroney, State House, Trenton; Atlantic City, December 16–18, 1920.

New Jersey Science Teachers' Association: M. T. Cook, State University of New Jersey, New Brunswick; Carl J. Hunkins, South Side High School, Newark; New Brunswick, November, 1920.

New Jersey—Continued.

New Jersey State Teachers' Association: Ide G. Sargeant, Paterson; H. J. Neal, Collingswood; Atlantic City, December 28-30, 1920.

Vocational Arts Association of New Jersey: C. E. Parsil, 1 Easton Avenue, New Brunswick; James E. Gaffney, 201 Victoria Avenue, Atlantic City.

New Mexico:

New Mexico Association for Science: L. A. Higley, State College; A. O. Weese, Albuquerque; Albuquerque, November 22-24, 1920.

New Mexico Educational Association: J. H. Wagner, Santa Fe; John Milne, Albuquerque; Albuquerque, November 22-26, 1920.

New York:

Associated Academic Principals: H. H. Denham, Vocational High School, Syracuse; Edward P. Smith, State Education Department, Albany; Syracuse, December 29-30, 1920.

Association of Agricultural Teachers and Principals: D. B. Trowbridge, Goshen; C. E. Pierce, Chautauqua.

Association of Colleges of the State of New York: Frederic C. Ferry, Hamilton College, Clinton; Augustus S. Downing, Education Building, Albany; Albany, about October 1, 1920.

New York State Association of District Superintendents: President, John D. Jones, Cuba.

New York State Association of English Teachers: E. B. Richards, Education Building, Albany; F. W. Treible, Utica; Rochester, November 22-24, 1920.

New York State Council of City School Superintendents: George M. Elmendorf, Plattsburg; Roy B. Kelley, Solvay; Albany, 1921.

New York State Council of Elementary School Principals and Teachers: H. D. Rickard, Syracuse; Rena A. Weider, School No. 9, Rochester; Rochester, Thanksgiving week, 1920.

New York State History Teachers' Association: Edgar W. Ames, Troy High School, Troy; William Wolgast, East High School, Rochester; Rochester, November 23, 1920.

New York State Home Economics Association: Laura Sexton, Chazy; Edith A. Sarver, 108 Union Street, Schenectady.

New York State Hygiene and Physical Education Association: Laurence S. Hill, City Hall, Albany; Edith M. Walker, State Normal School, Oswego; Rochester, November 23, 1920.

New York State Modern Language Association: Arthur G. Host, Troy High School, Troy; Catherine A. Eastman, State Education Department, Albany; Rochester, November 23-24, 1920.

New York State Science Teachers' Association: Morton C. Collister, Utica Academy, Utica; H. H. Van Cott, High School, Schenectady; Rochester, November 23, 1920.

New York State Teachers' Association: Judson S. Wright, Falconer; Richard A. Searing, 617 North Goodman Street, Rochester; Rochester, November 22-24, 1920.

North Carolina:

Association of Teachers of Secondary Mathematics: A. W. Hobbs, University of North Carolina, Chapel Hill; W. W. Rankin, jr., Chapel Hill; Greensboro, January or February, 1921.

North Carolina Association of City Superintendents: H. B. Smith, New Bern; Hoy Taylor, Franklinton; Asheville, November 25-26, 1920.

North Carolina Association of Geography Teachers: John J. Blair, Wilmington; Collier Cobb, Chapel Hill; Chapel Hill, July 21-22, 1921.

North Carolina Educational Association: Mildred Harrington, Aberdeen; Mary L. Harriss, Concord; Greensboro, October 5, 1920.

North Carolina Sunday School Association: G. T. Stephenson, Winston-Salem; D. W. Sims, Raleigh; Raleigh, April, 1921.

North Carolina Teachers' Assembly: S. B. Underwood, Greenville; A. T. Allen, Raleigh; Asheville, November 24-26, 1920.

North Dakota:

City Superintendents' Association of North Dakota: C. L. Love, Mandan; Nelson Sauvain, Devils Lake.

North Dakota Council of Geography Teachers: J. E. Switzer, State Normal School, Valley City; Huldah L. Winsted, State Normal School, Minot; Grand Forks, November, 1920.

North Dakota Education Association: A. C. Berg, Towner; W. E. Parsons, Bismarck; Grand Forks, November 10-12, 1920.

Ohio:

Conference of Ohio Presidents and Deans: A. G. Caris, Defiance; Helen M. Smith, College for Women, Cleveland; Columbus, March 24, 1921.

Ohio Association of English Teachers: Ethel M. Parmenter, East Technical High School, Cleveland; E. W. Chubb, Ohio University, Athens; Columbus, December, 1920.

Ohio College Association: W. G. Clippinger, Westerville; T. Bruce Birch, 1115 North Fountain Avenue, Springfield; Columbus, March 25, 1921.

Ohio History Teachers' Association: Kenneth S. Latourette, Denison University, Granville; Carl Wittke, Columbus; Columbus, October 15-16, 1920.

Ohio Home Economics Association: Emma Endley, Ohio University, Athens; Treva Kauffman, Ohio State University, Columbus; Columbus, December, 1920.

Ohio—Continued.

Ohio Industrial Arts Teachers' Association: G. E. McLaughlin, Athens; J. A. Davis, Warren; Columbus, December 28–29, 1920.

Ohio League of Teachers' Associations: R. H. Erwine, Springfield; F. W. Engelhardt, 2204 Fulton Avenue, Cincinnati; Columbus, December 26–31, 1920.

Ohio Society of College Teachers of Education: T. B. Birch, Wittenberg College, Springfield; F. C. Landsittell, Ohio State University, Columbus; Columbus, about April 1, 1921.

Ohio State Association of School Board Members: R. G. Ingleson, Avon Lake; W. J. Knight, Urbana; Columbus.

Ohio State Teachers' Association: Franklin P. Geiger, East Liverpool; F. E. Reynolds, 3610 Lydian Avenue, West Park; Columbus, December 28–30, 1920.

Oklahoma:

Oklahoma Council of Teachers of English: Adelia Clifton, Central High School, Oklahoma City; Ada Hanna, High School, Shawnee; Oklahoma City, April 7–9, 1921.

Oklahoma Educational Association: W. G. Masterson, McAlester; M. A. Nash, Capitol Building, Oklahoma City; Oklahoma City, spring or winter, 1921.

Oklahoma History Teachers' Association: A. Emma Estill, Edmond; C. W. Turner, Oklahoma City; Oklahoma City, February 15–17, 1921.

Oregon:

Oregon Council of Teachers of English: Edna Sterling, Salem; Mrs. Margaret B. Goodall, 1790 Fairmount Boulevard, Eugene; Portland, December 29–31, 1920.

Oregon State Teachers' Association: W. C. Alderson, 642 Court House, Portland; E. D. Ressler, Corvallis; Portland, December 29–31, 1920.

Pennsylvania:

Association of School Board Secretaries of Pennsylvania: John G. Shearer, Ford City; Ferdinand Reisgen, Ford City.

Pennsylvania State Education Association: W. G. Chambers, University of Pittsburgh, Pittsburgh; J. P. McCaskey, Lancaster; Harrisburg, December 28–31, 1920.

Pennsylvania State Modern Language Association: J. F. L. Raschen, University of Pittsburgh, Pittsburgh; William D. Meikle, Technical High School, Harrisburg; Harrisburg, December, 1920, with the Pennsylvania State Education Association.

Pennsylvania State School Directors' Association: C. Howard McCarter, Narberth; D. D. Hammelbaugh, Harrisburg; Harrisburg, probably February 10–11, 1921.

Public Education and Child Labor Association of Pennsylvania: Franklin N. Brewer, Wanamaker's Store, Philadelphia; Bruce M. Watson, 1720 Chestnut Street, Philadelphia.

Schoolmen's Week (University of Pennsylvania): Harlan Updegraff, Thirty-fourth and Chestnut Streets, Philadelphia; Le Roy A. King, Thirty-fourth and Chestnut Streets, Philadelphia; Philadelphia, April 14–16, 1921.

Rhode Island:

Rhode Island History Teachers' Association: Stephen S. Colvin, Brown University, Providence; M. Davitt Carroll, 76 Beaufort Street, Providence, Providence, October, 1921.

Rhode Island Institute of Instruction: John F. Deering, Riverpoint; M. Davitt Carroll, 122 Porasset Avenue, Providence; Providence, October 28–30, 1920.

South Carolina:

Association of Colleges of South Carolina: H. N. Snyder, Spartanburg; L. T. Baker, Columbia; probably with the South Carolina State Teachers' Association.

South Carolina Home Economics Association: Catharine A. Mulligan, Spartanburg; Lellah Martin, Spartanburg; Columbia, with the South Carolina State Teachers' Association.

South Carolina School Improvement Association: Madeleine Spigener, Lykesland; Mattie E. Thomas, Columbia; Columbia, Thanksgiving, 1920.

South Carolina State Colored Teachers' Association: J. L. Cain, Darlington; I. M. A. Myers, Columbia; Columbia.

South Carolina State Teachers' Association: E. C. McCants, Anderson; R. C. Burts, Rock Hill.

South Dakota:

South Dakota Commercial Teachers' Association: Thomas W. Neel, Yankton; Ella Starr, Madison; Aberdeen, November 22–24, 1920.

South Dakota Educational Association: E. C. Woodburn, Spearfish; A. H. Seymour, Aberdeen; Aberdeen, Oovember 22–24, 1920.

Tennessee:

Physical Education Society of Tennessee: John R. Bender, University of Tennessee, Knoxville; Jeannette M. King, Murfreesboro; Nashville, January, 1921, with the Tennessee Public School Officers' Association.

Tennessee State Public School Officers' Association: Charl Williams, Court House, Memphis; P. L. Harned, Clarksville; Nashville, January 11–12, 1921.

Tennessee State Teachers' Association: Q. M. Smith, Cleveland; P. L. Harned, Clarksville; Knoxville, October 28–30, 1920.

Texas:

Home Economics Association of Texas: Laura F. Neale, College Station; Jessie E. Rambo, Canyon; Fort Worth, November 26 or 27, 1920.

Texas State Teachers' Association: Robert E. Vinson, University Station, Austin; R. T. Ellis, 2938 Lipscomb Street, Fort Worth; Fort Worth, November 25-27, 1920.

Texas State Teachers' Association (Colored): A. E. Holland, Lincoln High School, Palestine; Mrs. F. A. Robinson, 1218 West Lacy Street, Palestine; Houston, November 25-27, 1920.

Utah:

Utah Educational Association: Vice president, A. M. Merrill, Ogden; J. Challen Smith, 968 Lake Street, Salt Lake City; Salt Lake City, December 28-30, 1920.

Utah Home Economics Association: Mrs. Nell Strewig, 251 South Fourth Street, East, Salt Lake City; Florence L. Parry, 3387 Highland Drive, Salt Lake City; Salt Lake City, December 28-30, 1920.

Vermont:

Schoolmasters' Club of the State of Vermont: J. E. Colburn, Burlington; E. H. Clowse, Richmond; Burlington, October 7, 1920.

Vermont State Teachers' Association: M. D. Chittenden, Burlington; Florence M. Wellman, Brattleboro; October 13-15, 1921.

Vermont Women Teachers' Club: Bessie B. Goodrich, Board of Education, Des Moines, Iowa; Ella L. Ferrin, Castleton; Burlington, October, 1920.

Virginia:

Association of Virginia Colleges: J. E. Williams, Blacksburg; Charles G. Maphis, University; Richmond, February 18-19, 1921.

Cooperative Education Association of Virginia: Mrs. B. B. Munford, Richmond; George W. Guy, Presbyterian Building, Richmond; Richmond, Thanksgiving week, 1920.

Public School Trustees Association of Virginia: William R. Duke, Charlottesville; M. F. McGehee, R. F. D. No. 2, Keysville; Richmond.

Rural Life Conference (University of Virginia): President, Florence H. Stubbs, 708 High Street, Farmville; University, August, 1921.

State Educational Conference:

Virginia English Teachers' Association: J. R. L. Johnson, East Radford; Miss Ray Van Vost, John Marshall High School, Richmond; Richmond, November 25, 1920.

Virginia Society for the Study of Education: J. Preston McConnell, East Radford; Robert T. Kerlin, Lexington; Richmond, November 24-26, 1920.

Virginia State Primary Teachers' Association: Lucy Saunders, Norfolk; Mary E. Coppedge, State Normal School, East Radford; Richmond, November 23-26, 1920.

Virginia State Teachers' Association: Presidency vacant; J. C. Fentress, 312 Lyric Building, Richmond; Richmond, week of November 22, 1920.

Washington:

Puget Sound English Masters' Club: George W. Saunderson, Lincoln High School, Seattle; H. D. Johnson, West Seattle High School, Seattle; Seattle.

Puget Sound Schoolmasters' Club: Howard R. Gould, Tacoma; Frank Farrar, 6725 Twenty-fourth Avenue, NW., Seattle; Tacoma, November 6 or 13, 1920.

Washington Educational Association: A. C. Davis, Yakima; C. C. Bras, Arcade Building, Seattle; Yakima, October 27-30, 1920.

West Virginia:

West Virginia Council of Teachers of English: Walter Barnes, Fairmont; Nelle Donley, Morgantown; Parkersburg, November 5, 1920.

West Virginia Education Association: Waitman Barbe, Morgantown; W. W. Trent, Elkins.

Wisconsin:

Vocational School Teachers' Association: J. B. Coleman, La Crosse; T. S. Rees, Vocational School, Racine; Milwaukee, November 4-6, 1920.

Wisconsin Agricultural Education Association: J. M. May, River Farm, Glen Lycan, Plymouth, Madison.

Wisconsin Association for Educational Research: E. F. Riley, Whitewater; Mrs. Cecile W. Flemming, Madison; Milwaukee, November 4-6, 1920.

Wisconsin Association of Mathematics Teachers: A. B. McCain, Washington High School, Milwaukee; W. W. Hart, University of Wisconsin, Madison; Milwaukee, November 5, 1920.

Wisconsin Association of Modern Foreign Language Teachers: H. H. Armstrong, Beloit College, Beloit; C. F. Gillen, 1726 Van Hise Avenue, Madison; Madison, about April 30, 1921.

Wisconsin Association of Vocational School Directors: H. G. Stewart, Green Bay; John Coleman, La Crosse; Milwaukee, November 4-6, 1920.

Wisconsin Colleges, Associated: Melvin A. Brannon, Beloit College, Beloit; William Daland, Milton College, Milton; Milwaukee.

Wisconsin History Teachers' Association: C. A. Smith, 1812 Ray Street, Madison; W. H. Hathaway, Riverside High School, Milwaukee; Milwaukee, November 4-5, 1920.

Wisconsin Music Teachers' Association: Theodore Winkler, Sheboygan; Lillian Watts, Park Avenue, Racine; Janesville, week of May 1, 1921.

Wisconsin—Continued.

Wisconsin Physical Education Association: W. J. Wittich, Normal School, La Crosse; Theresa Statz, Normal School, Oshkosh; Milwaukee, November 4–6, 1920.

Wisconsin Teachers' Association: C. M. Barr, Normal School, Milwaukee; M. A. Bussewitz, 455 Kenwood Boulevard, Milwaukee; Milwaukee, November 4–6, 1920.

Wyoming:

Wyoming State Teachers' Association: Flora S. Krueger, Wheatland; Mrs. Nellie L. Wales, Thermopolis; Lusk, October 5–8, 1920.

3. *City.*

Association of Women Principals of Public Schools of New York City: Jessie B. Colburn, 8 West One hundred and sixth Street; Loretto M. Rochester, 845 Lexington Avenue.

Boston Principals' Association: Augustus H. Kelley, 57 Montview Street, West Roxbury; Joseph F. Gould, 68 Union Street, South Weymouth.

Boston Teachers' Club: Annie G. Scollard, 11 Bowditch Street, East Braintree; Caroline E. Nutter, 125 Lexington Street, East; October, 1920.

Brooklyn Teachers' Association: Harold G. Campbell, Flushing High School, Flushing; Mary E. Hamilton, Public School 27.

Chicago's Principals' Club: Fred E. Smith, 5350 St. Louis Avenue; Mary E. Fellows, 1922 Patterson Avenue.

Chicago Teachers' Federation: Mrs. Ida L. M. Fursman, 127 North Dearborn Street; Frances E. Harden, 1543 Sherwin Avenue.

Cincinnati Schoolmasters' Club: E. D. Roberts, Denton Building; M. T. McElroy, Woodward High School.

Denver Teachers' Club: H. W. Zirkle, 357 Lincoln Street; Frances Doull, 4245 Umatilla Street; October 12, 1920.

Detroit Teachers' Association: Howard V. Hornung, Neinas Junior High School; Blanche Morris, Van Dyke High School; December 6, 1920.

Educational Society of Baltimore: George H. Reavis, State Department of Education; Francis M. Froelicher, Park School; October 14, 1920.

Elementary Teachers' Association (Baltimore): Laura W. Mainster, 3915 Gwyn Oak Avenue; Mary Bell, 2837 St. Paul Street; October 4, 1920.

Federation of Teachers' Associations of the City of New York.

High School Men Teachers' Association of Philadelphia: Robert B. Morris, South Philadelphia High School for Boys; J. Howard Longacre, 1524 North Sixty-first Street; November 3, 1920.

High School Teachers' Association of New York City: Harold E. Buttrick, Boys High School, Brooklyn; May E. Brockman, 60 East Thirteenth Street; October 2, 1920.

Interborough Association of Women Teachers (New York City): Grace Strachan-Forsythe, 20 West Seventy-second Street; Helen A. McKeon, 564½ Clinton Street, Brooklyn; October, 1920.

Los Angeles City Teachers' Club: Ida C. Iversen, 349 North Wilton Place; Adeline Newcomb, 1779 West Twenty-fifth Street.

Los Angeles High School Teachers' Association: E. B. Couch, 2320 Hillcrest Drive; W. R. Tanner, 4914 Fourth Avenue.

Louisville (Ky.) Educational Association: Anne Grunder, 1236 Cherokee Road; Alberta Rowell, 224 East St. Catherine Street.

Men Teachers' Association (Cincinnati): F. M. Holder, Muddy Creek Road (near Glenway); C. F. Siehl, 4441 Carnation Avenue.

New Haven (Conn.) Teachers' League: Carolyn Merchant, 145 Lennox Street; Helen L. Gilbert, 35 Chestnut Street, West Haven.

New York Academy of Public Education: William L. Felter, Girls High School, Brooklyn; T. Adrian Curtis, Public School 120, Manhattan.

New York City Association of Teachers of English: J. C. Tressler, 115 Pembroke Place, Kew Gardens, Long Island; Mary V. Riblet, Bryant High School, Long Island City.

New York City Principals' Association: Olive M. Jones, 187 Broome Street; Sara L. Rhodes, 1001 Herkimer Street, Brooklyn; October 1, 1920.

New York Schoolmasters' Club: David B. Corson, Board of Education, Newark, N. J; Matthew D. Quinn, 101 East Ninety-second Street; October 9, 1920.

New York Society for the Experimental Study of Education: John L. Tildsley, 500 Park Avenue; J. Carleton Bell, 1032A Sterling Place, Brooklyn.

Oakland (Calif.) Schoolwomen's Club: Mrs. Olive McCall, 3510 Telegraph Avenue; Alice M. Williams, 327 Forty-first Street.

Oakland (Calif.) Teachers' Association: W. E. Moore, 5665 Pryal Street: H. D Brasefield, 400 Hanover Avenue.

Passaic (N. J.) Teachers' Association: Gertrude A Curtis, 43 High Street; George R. Mee, School No. 12; October, 1920.

Philadelphia Teachers' Association: Lucy L. W. Wilson, 640 North Thirty-second Street; Emily M. Renshaw, 1415 South Fifty-eighth Street.

Pittsburgh Teachers' Association, 1003 Bessemer Building: John H. Adams.

Portland (Oreg.) Grade Teachers' Association: Mrs. Jennie Richardson, 1550 East Yamhill; Grace Towslee, 307 East Forty-eighth Street.

Public Education Association of Buffalo: Henry Ware Sprague, Erie County Bank Building; William P. Haines, 122 Pearl Street.

Public Education Association of Chicago: C. M. Moderwell, 332 South Michigan Avenue; Glen Edwards, 5486 Blackstone Avenue; May, 1921.

Public Education Association of the City of New York: Charles P. Howland, 37 Wall Street; Howard W. Nudd, 8 West Fortieth Street; January, 1921.

Public School Teachers' Association of Baltimore: Wilbur F. Smith, Baltimore City College; Minnie Daugherty, 437 West North Avenue; October 11, 1921.

Public School Teachers' Association of Providence (R. I.): George H. Eckels, Technical High School; Mary C. Dunn, 127 Vinton Street; October, 1920.

Richmond (Va.) Elementary Teachers' Association: Cornelia S. Adair, 1606 Grove Avenue; Ruth C. Bradley, 2010 Floyd Avenue; September 29, 1920.

Richmond (Va.) Teachers' League: Josephine H. Halloran, 2822A East Broad Street; Henrietta G. Pulliam, 2620A Hanover Avenue; October, 1920.

San Francisco Grade Teachers' Association: Mrs. E. L. Dacre, 45 Henry Street; Dorothy Farrell, 24 Henry Street.

Schoolmasters' Association of New York and Vicinity: W. R. Hayward, Theodore Roosevelt High School; Lloyd W. Johnson, Adelphi Academy, Brooklyn.

Schoolmen's Club of Philadelphia: Albert W. Dudley, 6303 North Eleventh Street; Thomas J. Dobbins, 510 Midvale Avenue.

Teachers' Council (New York City): William J. McAuliffe, 372 East One hundred and ninety-fourth Street; Louise A. Schneiker, 522 West One hundred and forty-fifth Street.

Utica (N. Y.) Teachers' Association: Vincent G. Brown, 10½ Lyon Place, New Hartford, N. Y.; Luella J. Thomas, 423 Court Street.

XL.—Learned and Civic Organizations.

The following list shows, first, the name of the organization; second, the name and address of the president; third, the name and address of the secretary, fourth, the place and date of the next meeting.

American Academy of Arts and Letters: Presidency vacant; Robert U. Johnson, 347 Madison Avenue, New York, N. Y.; New York, N. Y., November 17, 1920.

American Academy of Medicine: Frederick L. Van Sickle, Olyphant, Pa.; Thomas W. Grayson, 8037 Jenkins Arcade, Pittsburgh, Pa.; spring, 1921.

American Academy of Political and Social Science: Leo S. Rowe, Pan American Union, Washington, D. C.; J. P. Lichtenberger, University of Pennsylvania, Philadelphia, Pa.; Philadelphia, Pa., May, 1921.

American Association for Community Organization: Sherman C. Kingsley, Electric Building, Cleveland, Ohio; Elwood Street, Stark Building, Louisville, Ky.; Milwaukee, Wis., June, 1921, with National Conference of Social Work.

American Association for Labor Legislation: Thomas L. Chadbourne, 131 East Twenty-third Street, New York, N. Y.; John B. Andrews, 131 East Twenty-third Street, New York, N. Y.

American Association for the Advancement of Science: L. O. Howard, Smithsonian Institution, Washington, D. C.; Burton E. Livingston, Smithsonian Institution, Washington, D. C.; Chicago, Ill., December 27, 1920, to January 1, 1921.

American Association of Museums: Paul M. Rea, Charleston Museum, Charleston, S. C.; Harold L. Madison, Park Museum, Providence, R. I.; Cleveland, Ohio, probably May, 1921.

American Chemical Society: William A. Noyes, University of Illinois, Urbana, Ill.; Charles L. Parsons, 1709 G Street, NW., Washington, D. C.; Chicago, Ill., September 7-10, 1920.

American Child Hygiene Association: H. L. K. Shaw, Albany, N. Y.; Henry F. Helmholz, Mayo Clinic, Rochester, Minn.; New Haven, Conn., Fall, 1921.

American Civic Association: J. Horace McFarland, Harrisburg, Pa.; Eleanor E. Marshall, 914 Union Trust Building, Washington, D. C.; Amherst, Mass., October 14-16, 1920.

American Country Life Association: K. L. Butterfield, Amherst, Mass.; C. J. Galpin, United States Department of Agriculture, Washington, D. C.

American Economic Association: H. J. Davenport, Ithaca, N. Y.; R. B. Westerfield, Yale University, New Haven, Conn.; Atlantic City, N. J., December 27-31, 1920.

American Forestry Association: Charles Lathrop Pack, Lakewood, N. J.; Percival S. Ridsdale, 1410 H Street, NW., Washington, D. C.

American Genetic Association, P. O. Box 472, Eleventh Street Station, Washington, D. C.: David Fairchild, United States Bureau of Plant Industry, Washington, D. C.; George M. Rommel, United States Bureau of Plant Industry, Washington, D. C.; Washington, D. C., January 13, 1921.

American Geographical Society: John Greenough, Broadway and One hundred and fifty-sixth Street, New York, N. Y.; Isaiah Bowman, Broadway and One hundred and fifty-sixth Street, New York, N. Y.; New York, N. Y., November 23, 1920.

American Historical Association: Edward Channing, Harvard University, Cambridge, Mass.; John S. Bassett, Smith College, Northampton, Mass.; Washington, D. C., December 28-30, 1920.

American Library Association: Alice S. Tyler, Library School, Western Reserve University, Cleveland, Ohio; Carl H. Milam, 78 East Washington Street, Chicago, Ill.

American Mathematical Society: Frank Morley, Johns Hopkins University, Baltimore, Md.; F. N. Cole, Columbia University, New York, N. Y.; Chicago, Ill., September 7-11, 1920.

American Medical Association: W. C. Braisted, United States Navy, Washington, D. C.; A. R. Craig, 535 North Dearborn Street, Chicago, Ill.; Boston, Mass., June 6-10, 1921.

American Philological Association: Clifford H. Moore, 112 Brattle Street, Cambridge, Mass.; Clarence P. Bill, Adelbert College, Cleveland, Ohio; Baltimore, Md., December 28-30, 1920.

American Philosophical Association, Eastern Division: Ralph B. Perry, Harvard University, Cambridge, Mass.; A. H. Jones, Brown University, Providence, R. I.; New York, N. Y., about December 28-30, 1920.

American Philosophical Society: William B. Scott, Princeton, N. J.; I. Minis Hays, 104 South Fifth Street, Philadelphia, Pa.; Philadelphia, Pa., April 21-23, 1921.

American Political Science Association: Paul S. Reinsch, 205-212 Southern Building, Washington, D. C.; Frederic A. Ogg, University of Wisconsin, Madison, Wis.; Washington, D. C., December 28-30, 1920.

American Psychological Association: Shepherd I. Franz, Government Hospital for the Insane, Washington, D. C.; Edwin G. Boring, Clark University, Worcester, Mass.; Chicago, Ill., December 28-30, 1920.

American Public Health Association: M. P. Ravenel, University of Missouri, Columbia, Mo.; A. W. Hedrich, 169 Massachusetts Avenue, Boston, Mass.

American Social Hygiene Association: Hermann M. Biggs, 39 West Fifty-sixth Street, New York, N. Y.; Donald R. Hooker, Roland Park, Baltimore, Md., October, 1921.

American Society for Thrift: S. W. Straus, 150 Broadway, New York, N. Y.; H. R. Daniel, 220 West Forty-second Street, New York, N. Y.

American Sociological Congress: Theodore D. Bratton, Jackson, Miss.; Laura R. Church, Munsey Building, Washington, D. C.

American Sociological Society: J. Q. Dealey, Brown University, Providence, R. I.; Scott E. W. Bedford, University of Chicago, Chicago, Ill.; Washington, D. C., December 27-29, 1920.

American Statistical Association: George E. Roberts, 55 Wall Street, New York, N. Y.; Robert E. Chaddock, Columbia University, New York, N. Y.; Washington, D. C., December, 1920.

Association of American Geographers: Herbert E. Gregory, Yale University, New Haven, Conn.; Richard E. Dodge, Connecticut Agricultural College, Storrs, Conn.; Chicago, Ill., December 30, 1920, to January 1, 1921.

Botanical Society of America: N. L. Britton, New York Botanical Garden, New York, N. Y.; J. R. Schramm, Cornell University, Ithaca, N. Y.; Chicago, Ill., December 28-31, 1920.

Child Conservation League of America: Winfield Scott Hall, 3136 Ivison Avenue, Berwyn, Ill.; Mrs. Mary L. Beckwith, Woman's Temple, Chicago, Ill.; Chicago, Ill., March 17, 1921.

Child Health Organization of America, 156 Fifth Avenue, New York, N. Y.: Chairman, L. Emmett Holt; Director, Sally Lucas Jean.

Farm Women's National Congress: Mrs. Fannie M. Klinck, Clarkville, Iowa; Mrs. Nettie Dennison, Vermilion, S. Dak.; Topeka, Kans.

Geological Society of America: I. C. White, Morgantown, W. Va.; E. O. Hovey, American Museum of Natural History, New York, N. Y.; Chicago, Ill., December 28-30, 1920.

Inter-Racial Council, 233 Broadway, New York, N. Y.: Chairman, Coleman du Pont; Secretary, M. I. Pupin.

Jewish Agricultural and Industrial Aid Society: Cyrus L. Sulzberger, 516 West End Avenue, New York, N. Y.; Eugene S. Benjamin, 1019 Madison Avenue, New York, N. Y.

Mathematical Association of America: David Eugene Smith, Columbia University, New York, N. Y.; W. D. Cairns, Oberlin, Ohio; Chicago, Ill., December, 1920.

Military Training Camps Association of the U. S.: Grenville Clark, New York, N. Y.; Arthur F. Crosby, 19 West Forty-fourth Street, New York, N. Y.

Modern Language Association of America: John M. Manly, University of Chicago, Chicago, Ill.; Carleton Brown, University of Minnesota, Minneapolis, Minn.; Poughkeepsie, N. Y., December 28-30, 1920.

National Academy of Sciences: Charles D. Walcott, Smithsonian Institution, Washington, D. C.; Charles G. Abbot, Smithsonian Institution, Washington, D. C.; Princeton, N. J., November, 1920.

National Agricultural Society: Howard R. Smith, Live Stock Exchange Building, Chicago, Ill.; Robert Scoville, Hartford, Conn.

National Association of Audubon Societies: T. Gilbert Pearson, 1974 Broadway, New York, N. Y.; William P. Wharton, Groton, Mass.

National Child Welfare Association: William H. Wadhams, 48 East Seventy-eighth Street, New York, N. Y.; Charles F. Powlison, 70 Fifth Avenue, New York, N. Y.

National Civic Federation: Alton B. Parker, 61 Broadway, New York, N. Y.; D. L. Cease, Cleveland, Ohio.

National Community Board, 1516 H Street, NW. Washington, D. C.

National Conference of Social Work: Allen T. Burns, 576 Fifth Avenue, New York, N. Y.; W. H. Parker, 315 Plymouth Court, Chicago, Ill.; Milwaukee, Wis., June, 1921.

National Economic League: William Howard Taft, New Haven, Conn.; J. W. Beatson, 6 Beacon Street, Boston 9, Mass.

National Efficiency Society: Melvil Dewey, Lake Placid Club, N. Y.; H. F. J. Porter, 29 West Thirty-ninth Street, New York, N. Y.

National Geographic Society: Gilbert Grosvenor, National Geographic Society, Washington, D. C.; O. P. Austin, 55 Wall Street, New York, N. Y.; Washington, D. C., January 14, 1921.

National Historical Society: Frank Allaben, 37 West Thirty-ninth Street, New York, N. Y.; Mabel J. R. Washburn, 37 West Thirty-ninth Street, New York, N. Y.

National Institute of Arts and Letters: Cass Gilbert, 244 Madison Avenue, New York, N. Y.; Jefferson B. Fletcher, Columbia University, New York, N. Y.

National Institute of Social Sciences: Emory R. Johnson, University of Pennsylvania, Philadelphia, Pa.; Jesse Knight, 44 West Tenth Street, New York, N. Y.; January 21, 1921.

National Municipal League: Charles E. Hughes, 100 Broadway, New York, N. Y.; Harold W. Dodds, 261 Broadway, New York, N. Y.; Indianapolis, Ind., November 17-19, 1920.

National Research Council, 1701 Massachusetts Avenue, NW., Washington, D. C.: H. A. Bumstead; Vernon Kellogg.

National Safety Council: C. P. Tolman, 111 Broadway, New York, N. Y.; Sidney J. Williams, 168 North Michigan Avenue, Chicago, Ill.

National Security League: Charles D. Orth, 17 East Forty-ninth Street, New York, N. Y.; Lloyd Taylor, 17 East Forty-ninth Street, New York, N. Y.; New York, N. Y., May 4, 1921.

Pan American Society of the United States: Leo S. Rowe, Pan American Union, Washington, D. C.; John S. Prince, 15 Broad Street, New York, N. Y.; New York, N. Y., February 14, 1921.

Society for the Promotion of Agricultural Science: Burt L. Hartwell, Kingston, R. I.; Jacob G. Lipman, New Brunswick, N. J.

Southern Commercial Congress: Thomas R. Preston, Hamilton National Bank, Chattanooga, Tenn.; Clarence J. Owens, 1000 Vermont Avenue, Washington, D. C.; Washington, D. C.

Southern Sociological Congress: Samuel C. Mitchell, Richmond College, Richmond, Va.; J. E. McCulloch, Munsey Building, Washington, D. C.; probably May, 1921.

Woman's National Farm and Garden Association, Inc.: Mrs. Francis King, Alma, Mich.; Stella H. Webb, 414 Madison Avenue, New York, N. Y.

XLI.—STATE FEDERATION OF WOMEN'S CLUBS.

The officers of the General Federation of Women's Clubs (national organization) are: President, Mrs. Josiah Evans Cowles, 2011 West Adams Street, Los Angeles, Calif.; secretary, Mrs. Mary I. Wood, Portsmouth, N. H.

Name.	President.	Secretary.	Place of meeting.
Alabama	Mrs. Brevard Jones, Cloverdale Road, Montgomery.	Mrs. Bidd Graves, McDonough St., Montgomery.	Montgomery, November.
California	Mrs. Aaron Schloss, 3209 Claremont Ave., Berkeley.	Mrs. Frederick T. Robson, Vina, Stanford Ranch.	May, 1921.
Colorado	Mrs. Chas. H. Jacobson, 2201 Fairfax St., Denver.	Mrs. G. B. McFall, 2277 Bellaine St., Denvor.	Fort Collins, Sept. 28-Oct. 1, 1920.
Connecticut	Mrs. Horace B. Brainard, Thompsonville.	Mrs. J. H. Potter, Thompsonville.	New Milford, October.
Delaware	Mrs. H. D. Boyer, Smyrna.	Mrs. F. E. Booth, 700 West Clayton St., Wilmington.	
District of Columbia	Mrs. Howard L. Hodgkins, 1830 T St. NW., Washington.	Mrs. C. R. Cranmer, 1300 Kenyon St.	Washington, May, 1921.
Florida	Mrs. J. W. McCollum, Gainesville.	Miss Nell Winn Dempsey, Gainesville.	Tallahassee, Nov., 1920.
Georgia	Mrs. J. E. Hays, Montezuma.	Mrs. Albert Hill, Greenville	Atlanta, Nov. 2, 3, 4, 1920.
Idaho	Mrs. M. J. Sweeley, Twin Falls.	Mrs. Wilbur S. Hill, Twin Falls.	Coeur d'Alene, first week of October.
Illinois	Mrs. William H. Hart, 803 South Main St., Benton.	Mrs. Martin K. Northan, 1043 Forest Ave., Evanston.	Not decided; in May.
Kentucky	Mrs. Lafru Riker, Harrodsburg.	Mrs. W. L. Beardsley, Harrodsburg.	Danville, some time in spring of 1921.
Indiana	Mrs. E. C. Rumpler, 51 North Ritter Ave., Indianapolis.	Mrs. S. W. Grimes, 419 North Meridian, Brazil.	Indianapolis, Oct. 26 to 29, 1920.
Kansas	Mrs. Rebecca Wells Taylor, 205 South Pioneer St., Lyons.	Miss Lutie Jackson, 436 Parallel Ave., Kansas City.	Parsons, probably May, 1921.
Louisiana	Mrs. A. F. Steven, Morgan City.	Mrs. W. B. Reid, Morgan City.	Alexandria, Nov., 1920.
Maine	Mrs. Wm. E. Brewster, Dexter.	Mrs. Annie B. Cole, 30 Western Ave., Biddeford.	Brunswick, Sept. 29-30.
Maryland	Mrs. Francis Landerson, Piedmont, Ave., Walbrook.	Mrs. F. A. Pilling, 307 Collins Ave., Irvington.	Baltimore, last week of April, 1921.

XLI.—STATE FEDERATION OF WOMEN'S CLUBS—Continued.

Name.	President.	Secretary.	Place of meeting.
Massachusetts	Mrs. Geo. Minor Balser, Concord.	Mrs. Frank F. Spaulding, 15 Pleasant Ave., Everett.	Dorchester, Oct. 29, 1920.
Michigan	Mrs. Burrett Hamilton, Regent Building, Battle Creek.	Mrs. Dorian Russell, 535 Lyon St., Grand Rapids.	Saginaw, Oct. 12, 13, 14, 15, 1920.
Minnesota	Mrs. Geo. J. Allen, Rochester.	Mrs. F. L. Josselyn, Rochester.	Northfield, Sept. 28, 29, 30, 1920.
Mississippi	Mrs. Sam Covington, Summit.	Mrs. B. A. Heidenreich, McComb.	March or April.
Missouri	Mrs. Geo. A. Still, Kirksville.	Mrs. J. W. Parker, 3425 Gladstone Boulevard, Kansas City	Springfield, May, 1921.
Montana	Mrs. J. F. Kilduff, Malta.	Mrs. M. T. Weikle, Malta.	Billings, June 9–11, 1920.
Nebraska	Mrs. John Slaker, 735 North Hastings Ave., Hastings.	Mrs. Paul Perryman, Ord.	Fremont, 3d week in October.
Nevada	Mrs. J. E. Church, 358 Washington St., Reno.	Miss Clara Crisler, Carson City.	Carson City, Oct., 1921.
New Hampshire	Mrs. James W. Remick, 21 Merrimack St., Concord.	Mrs. Guy E. Speare, Littleton.	Concord, May 18, 19, and 20, 1920.
New Jersey	Mrs. J. R. Schermerhorn, East Orange.	Mrs. Theodore H. Sterling, Nutley.	Atlantic City, May, 1921.
New Mexico	Mrs. R. P. Donohoo, Santa Fe.	Mrs. F. S. Hinds, Tucumcari.	Tucumcari, Oct., 1920.
New York	Mrs. Geo. D. Hewitt, Carthage.	Mrs. Chas. J. Reeder, Carthage.	Utica, Oct. 12, 13, 14, 15, 1920.
North Carolina	Mrs. Chas. C. Hook, 427 East Moorehead St., Charlotte.	Mrs. H. A. Merrill, Charlotte.	Henderson, last of October.
Ohio	Mrs. William H. Sharpe, 82 Sixteenth Ave., Columbus.	Mrs. W. L. Whitacre, 199 Fifteenth Ave., Columbus.	Oct. 18–23, 1920.
Oklahoma	Mrs. J. C. Pearson, Marshall.	Mrs. C. R. Phelps, 806 West Eighteenth St., Oklahoma City.	McAllister, Nov., 1921.
Oregon	Mrs. Ida B. Callahan, 563 Monroe St., Corvallis.	Mrs. Charles Hinds, Forest Grove.	Pendleton, May, 1921.
Pennsylvania	Miss Florence M. Dibert, 601 Franklin St., Johnstown.	Mrs. Harvey Smith, 130 State St., Harrisburg.	Harrisburg, Oct. 11–16.
Rhode Island	Mrs. Howard W. Farnum, Chepachet.	Mrs. Frank Chapman, 65 Atlantic Ave., Providence.	Pawtucket, July, 1920.
South Carolina	Mrs. Rufus Fant, Anderson.	Mrs. O. L. Martin, Anderson.	Not decided. April.
South Dakota	Mrs. Walton Renrick Porter, Fort Pierre.	Mrs. Lillian Smith, Brookings.	Rapid City, Oct. 5, 6, 7, 1920.
Texas	Mrs. Florence C. Floore, 619 North Anglin, Cleburne.	Miss Carrie Galvin, 619 North Anglin, Cleburne.	San Antonio, Nov. 16–20.
Utah	Mrs. Elmer O. Leatherwood, 1237 East First St., Salt Lake City.	Mrs. John Culley, Ogden.	Ogden, some time in October.
Vermont	Mrs. Walter W. Slack, 9 Elem St., Springfield.	Mrs. Ada F. Flinn, 44 Park St., Springfield.	Bennington, June 7, 8, and 9, 1921.
Virginia	Mrs. Henry E. Parker, 112 Twenty-seventh St., Newport News.	Mrs. Russell Barrett, 128 Twenty-second St., Newport News.	Tazewell, some time in October.
West Virginia	Mrs. Woodson T. Wills, Edgewood Drive, Charleston.	Mrs. Hugh G. Nicholson, 215 Bradford St., Charleston.	Bluefield, October, probably last week.
Wisconsin	Mrs. H. S. Richards, 14 Prospect Ave., Madison.	Mrs. M. C. Rotier, 642 Frederick Ave., Milwaukee.	Superior, Sept. 28, 29, 30.
Wyoming	Mrs. Lin I. Noble, Thermopolis.	Mrs. Fred Wyckoff, Thermopolis.	Casper, Sept. 29, 30, Oct. 1.

XLII.—NATIONAL CONGRESS OF MOTHERS AND PARENT-TEACHER ASSOCIATIONS.

The officers of the National Congress of Mothers and Parent-Teacher Associations (National Organization are): President, Mrs. Milton P. Higgins, 228 West Street, Worcester, Mass.; Secretary, Mrs. Arthur Watkins, 1314 Massachusetts Avenue, Washington, D. C.

Name.	President.	Secretary.	Place of meeting.
Alabama	Mrs. H. S. Doster, Prattville.	Mrs. W. H. Harrison, Montgomery.	Montgomery; latter part of October.
Arizona	Mrs. J. C. Norton, Phoenix	....	
California	Mrs. Harry T. Ewing, 70 E. Williams St., San Jose.	....	
Connecticut	Mrs. Geo. B. Chandler, Rocky Hill.	Mrs. E. F. Belden, Rocky Hill.	Hartford; June 15, 1920.
Colorado	Mrs. R. C. Campbell, 1075 Pa. Ave., Denver.	....	
Delaware	Mrs. J. C. Cleaver, Middletown.	....	
District of Columbia	Mrs. G. S. Rafter, 1774 Kilbourne Place, Washington.	....	
*Florida	....	....	
Georgia	Mrs. C. P. Ozburn, 175 Oakland Ave., Atlanta.	....	
Idaho	Mrs. John Thomas Gording.	....	
Illinois	Mrs. William F. Young, 5506 Rice St., Chicago.	Mrs. Julius Floto, 32 North Mayfield Ave., Chicago.	Galesburg, May, 1921.
Indiana	Mrs. Hence Orme, Route D, Box 313, Indianapolis.	Dr. Edna Hatfield, Edmonston, Bloomington.	Indianapolis, Oct. 20, 21, 22, 1920.
Iowa	Miss Carolyne Forgrave, Perry.	Mrs. H. D. Gray, 1405 23d St., Des Moines.	Des Moines, November, 1920.
Kansas	Mrs. J. K. Codding, Lansing.	Miss Lillian Kun, 810 South 2d St., Leavenworth.	Not decided; September, 1920.
Kentucky	Mrs. Geo. C. Weldon, Eastleight, Louisville.	....	
Maine	Mrs. Hugh Ross-Hatch, Fairfield.	....	
Maryland	Mrs. Harry E. Parkhurst, 1410 Park Ave., Baltimore.	....	
Massachusetts	Mrs. Edward C. Mason, 8 Grove St., Winchester.	Miss Ruth A. Bottomly, 228 West St., Worcester.	Boston, October, 1920.
Michigan	Mrs. C. E. Stewart, 65 University Ave., Battle Creek.	....	
Mississippi	Mrs. H. P. Hughes, Senatobia.	Mrs. H. O. Bland, Jackson.	Natchez, Oct. 25, 1920.
Missouri	Mrs. William Ullman, 521 E. Walnut St., Springfield. Kansas City.	....	
Montana	Mrs. H. B. Farnsworth, 601 Daly Ave., Missoula.	Mrs. Jennie Teague, 516 4th St., Great Falls.	
North Carolina	Mrs. Joseph Garibaldi, 214 Park Ave., Charlotte.	Mrs. J. H. Shuford, 411 East Boulevard, Charlotte.	
New Hampshire	Mrs. Chas. H. McDuffee, Alton.	Mrs. F. U. Landman, Wolfeboro.	Portsmouth, May, 1921.
*New Mexico	Ruth C. Miller, Santa Fe	Jessie R. Gray, Hot Springs	Albuquerque, Nov. 22, 1920.
New Jersey	Mrs. Drury W. Cooper, Montclair.	....	Atlantic City, Nov. 12–13.
New York	Mrs. M. C. Holley, Lockport.	Mrs. F. D. Bidwell, 55 Manning Boulevard, Albany.	Kingston, Oct. 5–8.
*North Dakota	....	....	
Ohio	Mrs. S. M. Williams, 1534 Lakewood Ave., Lima.	Mrs. Chas. Oxline, 8 The Priscilla, Hyde Park, Cincinnati.	Dayton, Oct. 14–15, 1920.
Oregon	Mrs. C. W. Hayhurst, 170 Vista Ave., Portland.	Mrs. J. F. Risley, Milwaukee.	Quarterly, Portland.
Pennsylvania	Mrs. E. E. Kierman, Somerset.	Mrs. Wm. B.ice, Bedford	Williamsport; probably Nov. 3, 4, 5.
Rhode Island	Mrs. Ed. S. Moulton, 96 Alumni Ave., Providence.	Mrs. Edward McCabe, 130 Messer St., Providence.	Providence, first Monday in October.
*South Carolina	....	....	
South Dakota	Mrs. H. R. Kenaston, Bonesteel.	Mrs. W. S. Hill, Mitchell	Watertown, Sept. 28, 29, 30, 1920.

* States with star have no State branch.

XLII.—NATIONAL CONGRESS OF MOTHERS AND PARENT-TEACHER ASSOCIATIONS—Continued.

Name.	President.	Secretary.	Place of meeting.
Tennessee	Mrs. Eugene Crutcher, 817 Lischey Ave., Nashville.		
Texas	Mrs. S. M. N. Morris, Austin.		Dallas, Nov. 10, 11, 12.
Vermont	Mrs. P. W. Freeman, Rutland.	Mrs. F. E. Kingsley, Brandon.	Not decided.
Virginia	Mrs. Robert F. Hudson, 2002 Park Ave., Richmond.		
Washington	Mrs. C. Arthur Varney, The Donnelly, Yakima.	Mrs. M. A. Peacock, 510 South 6th Ave., Yakima.	Seattle or Walla Walla, May, 1921.
Wisconsin	Mrs. Geo. N. Tremper, 726 Exchange St., Kenosha.	Mrs. Edward Birkenwald, 345 Prospect Ave., Milwaukee.	Milwaukee, Nov. 4. 5, 1920.

XLIII.—EDUCATIONAL PERIODICALS.

List of American educational periodicals currently received by the library of the Bureau of Education.

[List of abbreviations: bm.=bimonthly; ir.=irregular; m.=monthly; q.=quarterly; sm.=semimonthly; w.=weekly.]

Alabama. *See* Alabama School Progress; Educational Exchange.

Alabama School Progress. Montgomery. m.

American Child. 105 East Twenty-second Street, New York. q.

American Education. 50 State Street, Albany (N. Y.). 10 nos.

American Journal of School Hygiene. Worcester (Mass.). q.

American Oxonian. 18 North Main Street, Concord (N. H.). q.

American Penman. 30 Irving Place, New York. m.

American Physical Education Review. Springfield (Mass.). 9 nos.

American School. P. O. Box 134, Milwaukee. m.

American School Board Journal. 354 Milwaukee Street, Milwaukee. m.

American Schoolmaster. Ypsilanti (Mich.). 10 nos.

American Teacher. 225 Fifth Avenue, New York. 10 nos.

Arizona Teacher and Home Journal. Phoenix. 10 nos.

Arkansas Teacher. Little Rock. 10 nos.

Boston Teachers News-Letter. Ford Building, Boston. 10 nos.

Bulletin of High Points in the Work of the High Schools of New York City. Board of Education Building, New York. 10 nos.

Business Educator. Columbus (Ohio). 10 nos.

California. *See* California Blue Bulletin; Los Angeles School Journal; Sierra Educational News; University of California Chronicle; Western Journal of Education.

California Blue Bulletin. Sacramento. q.

Catholic Educational Review. Washington (D. C.). 10 nos.

Catholic School Journal. Milwaukee. 10 nos.

Chicago Schools Journal. Chicago Normal College, Chicago. 10 nos.

Child-Welfare Magazine. 227 South Sixth Street, Philadelphia. m.

Chinese Students' Monthly. 106 Morningside Drive, New York. 8 nos.

Christian Education. 19 South La Salle Street, Chicago. m.

Christian Education Monthly. Nashville (Tenn.). m.

Christian Educator. Washington (D. C.). 10 nos.

Christian Educator. 520 Plum Street, Cincinnati. q.

Christian Student. 150 Fifth Avenue, New York. q.

Church School. 150 Fifth Avenue, New York. m.

Classical Journal. University of Chicago Press, Chicago. 9 nos.

Classical Weekly. Barnard College, New York. w. from October to May.

Colorado School Journal. Denver. 10 nos.

Community Center. Mount Morris (Ill.). ir.

Connecticut. *See* Connecticut Schools; New Haven Teachers' Journal.

Connecticut Schools. Hartford. m.

Current Education. Teacher Publishing Co., Philadelphia. 10 nos.

District of Columbia. *See* Catholic Educational Review; Christian Educator; Educational Record; Junior Red Cross News; National Education Association Bulletin; School Life; Vocational Summary; Volta Review.

Education. 120 Boylston Street, Boston. 10 nos.
Education Bulletin. Trenton (N. J.). 10 nos.
Educational Administration and Supervision. Warwick & York (Inc.), Baltimore. 10 nos.
Educational Exchange. Birmingham (Ala.). m.
Educational Film Magazine. 33 West Forty-second Street, New York. m.
Educational Foundations. 31-33 East Twenty-seventh Street, New York. 10 nos.
Educational Issues. 46 North Pennsylvania Street, Indianapolis. m.
Educational Record. 818 Connecticut Avenue, Washington (D. C.). q.
Educational Review. George H. Doran Co., New York. 10 nos.
Educator-Journal. 403 Newton Claypool Building, Indianapolis. m.
Elementary School Journal. University of Chicago, Chicago. 10 nos.
Engineering Education. Bulletin of the Society for the Promotion of Engineering Education. Lancaster (Pa.). 10 nos.
English Journal. University of Chicago Press, Chicago. 10 nos.
English Leaflet. Newtonville (Mass.). 9 nos.
General Science Quarterly. Salem (Mass.). q.
Georgia. *See* High School Quarterly; School and Home.
Harvard Graduates' Magazine. Exchange Building, Boston. q.
Hawaii Educational Review. Honolulu. 10 nos.
High School Journal. Chapel Hill (N. C.). 8 nos.
High School Quarterly. Athens (Ga.). q.
Historical Outlook. McKinley Publishing Co., Philadelphia. 9 nos.
Home and School Guest. Stroudsburg (Pa.). q.
Hospital School Journal. Farmington (Mich.). bm.
Idaho Teacher. Boise. 10 nos.
Illinois. *See* Chicago Schools Journal; Christian Education; Classical Journal; Community Center; Elementary School Journal; English Journal; Illinois Association of Teachers of English Bulletin; Illinois Teacher; Journal of Educational Research; Manual Training Magazine; Religious Education; School and Home Education; School Century; School News and Practical Educator; School Review; School Science and Mathematics; Schools and People; University Record; Visual Education.
Illinois Association of Teachers of English Bulletin. Urbana. 8 nos.
Illinois Teacher. Carlinville. 10 nos.
Indiana. *See* Educational Issues; Educator-Journal.
Industrial-Arts Magazine. Bruce Publishing Co., Milwaukee. m.
Inter-Mountain Educator. Missoula (Mont.). 10 nos.
Iowa. *See* Junior High Clearing House; Midland Schools; School Music.
Johns Hopkins Alumni Magazine. Baltimore. q.
Journal of Applied Psychology. Worcester (Mass.). q.
Journal of Education. 6 Beacon Street, Boston. w.
Journal of Educational Psychology. Warwick & York (Inc.), Baltimore. 10 nos.
Journal of Educational Research. Public School Publishing Co., Bloomington (Ill.). m.
Journal of Experimental Psychology. Princeton (N. J.). bm.
Journal of Geography. State Normal School, Mankato (Minn.). 9 nos.
Journal of Home Economics. 1211 Cathedral Street, Baltimore. m.
Journal of the Association of Collegiate Alumnæ. Cooperstown (N. Y.). m.
Journal of the New York State Teachers' Association. Rochester. 8 nos.
Junior High Clearing House. Sioux City (Iowa). 8 nos.
Junior Red Cross News. Washington (D. C.). 9 nos.
Kansas. *See* Kansas Teacher; Teaching.
Kansas Teacher. Topeka. m.
Kentucky. *See* Kentucky High School Quarterly; Southern School Journal.
Kentucky High School Quarterly. Lexington. q.
Kindergarten and First Grade. Springfield (Mass.). 10 nos.
Kindergarten-Primary Magazine. Manistee (Mich.). 10 nos.
Los Angeles School Journal. 422-423 Chamber of Commerce Building, Los Angeles. w.
Louisiana. *See* Southern School Work.
Maine State School Bulletin. Augusta. 10 nos.
Manual Training Magazine. Peoria (Ill.). m.
Maryland. *See* Educational Administration and Supervision; Johns Hopkins Alumni Magazine; Journal of Educational Psychology; Journal of Home Economics; Mother and Child.
Massachusetts. *See* American Journal of School Hygiene; American Physical Education Review; Boston Teachers News-Letter; Education; English Leaflet; General Science Quarterly; Harvard Graduates' Magazine; Journal of Applied Psychology; Journal of Education; Kindergarten and First Grade; Pedagogical Seminary; Popular Educator; Primary Education; School Arts Magazine.
Mathematics Teacher. Lancaster (Pa.). q.
Mental Hygiene. 27 Columbia Street, Albany (N. Y.). q.
Michigan. *See* American Schoolmaster; Hospital School Journal; Kindergarten-Primary Magazine; Moderator-Topics.

Middle-West School Review. Omaha (Nebr.). 10 nos.
Midland Schools. Des Moines. 10 nos.
Mind and Body. New Ulm (Minn.). 10 nos.
Minnesota. *See* Journal of Geography; Mind and Body; National School Building Journal; National School Digest.
Mississippi Educational Advance. Jackson. 10 nos.
Missouri. *See* Missouri School Journal; Rural School Messenger.
Missouri School Journal. Jefferson City. 10 nos.
Moderator-Topics. Lansing (Mich.). w. except July and August.
Modern Language Journal. 68th and Park Avenue, New York. 8 nos.
Montana. *See* Inter-Mountain Educator.
Mother and Child. 1211 Cathedral Street, Baltimore. bm.
National Association of Corporation Training Bulletin. 130 East Fifteenth Street, New York. m.
National Education Association Bulletin. 1201 Sixteenth Street, NW., Washington (D. C.). m.
National School Building Journal. St. Paul (Minn.). m.
National School Digest. 1405 University Avenue, S. E., Minneapolis (Minn.). 9 nos.
Nature-Study Review. Ithaca (N. Y.). 9 nos.
Nebraska. *See* Middle-West School Review; Nebraska Teacher.
Nebraska Teacher. Lincoln. 10 nos.
Nevada Educational Bulletin. Carson City. 10 nos.
New Hampshire. *See* American Oxonian.
New Haven Teachers' Journal. New Haven (Conn.). 5 nos.
New Jersey. *See* Education Bulletin; Journal of Experimental Psychology; School News; Training School Bulletin.
New Mexico Journal of Education. Santa Fe. 10 nos.
New York. *See* American Child; American Education; American Penman; American Teacher; Bulletin of High Points in the Work of the High Schools of New York City; Chinese Students' Monthly; Christian Student; Church School; Classical Weekly; Educational Film Magazine; Educational Foundations; Educational Review; Journal of the Association of Collegiate Alumnae; Journal of the New York State Teachers' Association; Mental Hygiene; Modern Language Journal; National Association of Corporation Training Bulletin; Nature-Study Review; Normal Instructor and Primary Plans; Physical Training; Playground; School and Community; School and Home; School and Society; School Bulletin; School Magazine; Teachers College Record; Teacher's Monographs; Ungraded; Vocationist.
Normal Instructor and Primary Plans. Dansville (N. Y.). 10 nos.
North Carolina. *See* High School Journal; North Carolina Education; Training School Quarterly.
North Carolina Education. Raleigh. 10 nos.
North Dakota. *See* Quarterly Journal of the University of North Dakota.
Northwest Journal of Education. Seattle. 10 nos.
Ohio. *See* Business Educator; Christian Educator; Ohio Educational Monthly; Ohio History Teachers' Journal; Ohio Teacher; School Index; School Topics; Sunday School Journal.
Ohio Educational Monthly. Columbus. m.
Ohio History Teachers' Journal. Columbus. q.
Ohio Teacher. Columbus. m.
Oklahoma School Herald. Tulsa. 10 nos.
Oregon Teachers' Monthly. Salem. 10 nos.
Pedagogical Seminary. Worcester (Mass.). q.
Pennsylvania. *See* Child-welfare Magazine; Current Education; Engineering Education; Historical Outlook; Home and School Guest; Mathematics Teacher; Pennsylvania School Journal; Pittsburgh School Bulletin; Psychological Clinic.
Pennsylvania School Journal. Lancaster. m.
Philippine Education. Manila. 10 nos.
Philippine News Review. Manila. sm.
Physical Training. 124 East Twenty-eighth Street, New York. 10 nos.
Pittsburgh School Bulletin. 1003 Bessemer Building, Pittsburgh. 10 nos.
Playground. 1 Madison Avenue, New York. m.
Popular Educator. 50 Bromfield Street, Boston. 10 nos.
Porto Rico School Review. San Juan. 10 nos.
Primary Education. 50 Bromfield Street, Boston. 10 nos.
Progressive Teacher. Knoxville (Tenn.). 10 nos.
Psychological Clinic. Woodland Avenue and Thirty-sixth Street, Philadelphia. 9 nos.
Quarterly Journal of Speech Education. Menasha (Wis.). q.
Quarterly Journal of the University of North Dakota. University. q.
Religious Education. 1440 East Fifty-seventh Street, Chicago. bm.
Rural Education. Aberdeen (S. Dak.). m.
Rural School Messenger. Kirksville (Mo.). q.
School. 154 Fifth Avenue, New York. w.
School and Community. Buffalo. sm.

School and Home. Atlanta (Ga.). m.
School and Home. Ethical Culture School, New York. 3 nos.
School and Home Education. Bloomington (Ill.). 10 nos.
School and Society. Garrison-on-Hudson (N. Y.). w.
School Arts Magazine. 25 Foster Street, Worcester (Mass.). 10 nos.
School Bulletin. Syracuse (N. Y.). m.
School Century. Oak Park (Ill.). 10 nos.
School Index. Cincinnati. w.
School Life. Bureau of Education, Washington (D. C.). sm.
School Magazine. Buffalo. m.
School Music. Keokuk (Iowa). bm. except July.
School News. Asbury Park (N. J.). m.
School News and Practical Educator. Taylorville (Ill.). 10 nos.
School Review. University of Chicago, Chicago. 10 nos.
School Science and Mathematics. Mount Morris (Ill.). 9 nos.
School Topics. Cleveland (Ohio). sm.
Schools & People. 1802 South Racine Avenue, Chicago. 10 nos.
Sierra Educational News. San Francisco. 10 nos.
South Carolina Education. Columbia. 8 nos.
South Dakota. *See* Rural Education; South Dakota Educator.
South Dakota Educator. Mitchell. 10 nos.
Southern School Journal. Louisville (Ky.). m.
Southern School Work. Alexandria (La.). 10 nos.
Southern Workman. Hampton (Va.). m.
Southwestern School Review. Austin (Texas). 6 nos.
Sunday School Journal. Methodist Book Concern, Cincinnati. m.
Teachers College Record. Teachers College, Columbia University, New York. bm. except July.
Teacher's Monographs. 16 Court Street, Brooklyn (N. Y.). bm.
Teaching. Emporia (Kans.). bm.
Tennessee. *See* Christian Education Monthly; Progressive Teacher.
Texas. *See* Southwestern School Review; Texas Outlook; Texas School Journal.
Texas Outlook. Fort Worth. m.
Texas School Journal. Dallas. 10 nos.
Training School Bulletin. Vineland (N. J.). 10 nos.
Training School Quarterly. Greenville (N. C.). q.
Ungraded. 500 Park Avenue, New York. 9 nos.
University of California Chronicle. Berkeley. q.
University Record. University of Chicago Press, Chicago. q.
Utah Educational Review. Salt Lake City. 10 nos.
Virginia. *See* Southern Workman; Virginia Journal of Education; Virginia Teacher.
Virginia Journal of Education, Richmond. 10 nos.
Virginia Teacher. Normal Station, Harrisonburg. m.
Visual Education. 327 South La Salle Street, Chicago. 10 nos.
Vocational Summary. Federal Board for Vocational Education, Washington (D. C.). m.
Vocationist. Oswego (N. Y.). q.
Volta Review. Washington (D. C.). m.
Washington. *See* Northwest Journal of Education.
West Virginia School Journal and Educator. Charleston. m.
Western Journal of Education. 324 Phelan Building, San Francisco. m.
Wisconsin. *See* American School; American School Board Journal; Catholic School Journal; Industrial-Arts Magazine; Quarterly Journal of Speech Education; Wisconsin Educational Horizon; Wisconsin Journal of Education.
Wisconsin Educational Horizon. Madison. bm.
Wisconsin Journal of Education. Madison. 10 nos.
Wyoming Educational Bulletin. Cheyenne. m.
Wyoming School Journal. Laramie. 10 nos.

O

DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 34

STATISTICS OF UNIVERSITIES, COLLEGES, AND PROFESSIONAL SCHOOLS, 1917-18

PREPARED BY THE STATISTICAL DIVISION
OF THE BUREAU OF EDUCATION

Under the supervision of
H. R. BONNER
Collector and Compiler of Statistics

[Advance sheets from the Biennial Survey of Education in
the United States, 1916-1918]

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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STATISTICS OF UNIVERSITIES, COLLEGES, AND PROFESSIONAL SCHOOLS, 1917-18.

CONTENTS.—Institutions reporting—Size of institutions—Instructors—Attendance at higher institutions—Enrollment by departments—Enrollment in public and private institutions—Proportion of men and women—Degrees conferred—College graduates living—School and college mortality—Libraries—Endowment—Benefactions—Value of all property—Professional schools—Tuition fees in law, medicine, and dentistry—Income—Per cent of income from each source—Special courses.

This report presents the statistics of universities, colleges, and professional schools for the school year 1917–18. An attempt has been made also to secure certain comparative statistics from preceding reports in order to measure any changes which have taken place in the practices of such institutions. The report, therefore, portrays historical tendencies and present conditions.

In corresponding preceding reports the chapter on colleges, universities, and technological schools did not include the statistics of professional schools which were not associated with or affiliated with the colleges and universities. In fact, the statistics of all professional schools were treated separately. As a result the statistics of affiliated professional schools were duplicated in two chapters of the report. The present plan of including the statistics of independent professional schools with those of universities and colleges avoids this duplication.

INSTITUTIONS REPORTING.

For the year ending June, 1918, the Bureau of Education received reports from 672 universities, colleges, and professional schools. Of this number 118 were independent professional schools, including 78 schools of theology, 12 of law, 9 of medicine, 4 of veterinary medicine, 8 of dentistry, and 7 of pharmacy. States and municipalities control 112 of these 672 institutions and private corporations control 560 institutions. Of the 554 universities, colleges, and technological schools, 111 are under public and 443 under private control. Only one independent professional school is under public control, the other 117 being controlled by private organizations.

TABLE 1.—*Review of statistics of universities, colleges, and technological schools, including women's colleges, but excluding independent professional schools, 1890–1918*—PART I—Continued.

Items.	1906	1908	1910	1912	1914	1916	1918
STUDENTS—continued.							
Collegiate departments:							
Men	92,441	101,188	113,074	117,756	130,488	152,860	134,271
Women	48,497	83,198	40,792	69,040	72,911	90,181	105,436
Total	140,938	134,386	153,866	186,796	203,399	243,041	239,707
Graduate departments:							
Men	5,297	5,757	6,504	7,994	8,885	11,215	8,497
Women	2,329	2,067	2,649	3,663	4,209	5,255	5,909
Total	7,626	7,824	9,153	11,657	13,094	16,470	14,406
Professional departments:							
Men	33,239	31,881	37,903	36,154	35,695	39,301	45,763
Women	901	1,522	1,338	1,462	1,484	1,630	2,830
Total	34,140	33,403	39,241	37,616	37,179	40,931	48,593
All other students:							
Men	......	......	......	......	12,982	16,432	11,385
Women	......	......	......	......	24,462	25,824	24,798
Total	......	......	......	......	37,444	42,256	36,183
Total number, excluding duplicates:							
Men	[b] 177,733	194,599	200,339	208,108	217,683	249,271	223,841
Women	[b] 80,870	70,436	73,745	110,315	117,295	137,835	151,518
Total	258,603	265,035	274,084	318,423	334,978	387,106	375,359
Collegiate and resident graduate students:							
Men	97,738	106,945	119,578	125,750	139,373	164,075	142,768
Women	50,826	54,815	64,005	72,703	77,120	95,436	111,345
Total	148,564	161,760	183,583	198,453	216,493	259,511	254,113
Undergraduate and graduate students:							
In public institutions—							
Men	38,975	46,183	49,919	51,821	60,321	70,946	[e] 62,162
Women	12,618	14,075	17,707	23,995	27,499	36,291	[e] 44,019
Total	51,593	60,258	67,626	75,816	87,820	107,237	[e] 106,181
In private institutions—							
Men	58,763	61,646	70,663	74,797	79,052	93,129	[e] 80,436
Women	38,208	41,014	46,423	48,905	49,621	59,145	[e] 67,306
Total	96,971	102,660	117,086	123,702	128,673	152,274	[e] 147,742
Students in engineering courses:							
General engineering	2,501	......	......	......	......	5,485	7,203
Civil engineering	7,962	......	7,889	......	......	7,251	5,108
Mechanical engineering	7,426	......	6,377	......	......	7,707	5,944
Electrical engineering	5,696	......	5,450	......	......	7,098	5,683
Mining engineering	2,826	......	2,656	......	......	1,790	1,298
Chemical engineering	1,234	......	869	......	......	2,774	4,548
DEGREES CONFERRED.[1]							
Baccalaureate:							
Men	12,351	12,237	15,267	15,053	16,468	20,586	[1] 14,720
Women	6,204	6,378	7,420	9,315	10,065	11,240	[1] 13,332
Total	18,555	18,615	22,687	24,368	26,533	31,826	[1] 28,052
Graduate:							
Men	1,684	1,839	1,920	4,360	4,160	3,462	[1] 2,320
Women	416	515	602	852	1,088	1,062	[1] 1,160
Total	2,100	2,354	2,522	5,212	5,248	4,524	[1] 3,480
Honorary	807	714	672	914	749	825	736
Ph. D. degrees, on examination:							
Men	312	343	365	446	446	520	499
Women	25	51	44	63	73	81	63
Total	337	394	409	509	519	601	562

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[b] Estimated as to division.

[1] Does not include degrees conferred by professional schools.

[e] Does not include statistics of independent professional schools.

TABLE 1.—*Review of statistics of universities, colleges, and technological schools, including women's colleges but excluding independent professional schools, 1890–1918*—PART II.

Items.	1890	1892	1894	1896	1898	1900	1902	1904
PROPERTY.								
Number of fellowships and scholarships	5,788	5,318	6,559	7,534	8,334	9,039	11,374	11,201
Volumes in the libraries	4,520,553	5,000,343	6,829,914	7,209,142	7,899,505	8,764,214	9,782,501	10,701,230
Value of apparatus, machinery, library, and furniture	$9,054,285	$11,754,140	$14,073,806	$19,821,675	$24,384,284	$31,431,064	$35,739,236	$40,323,640
Value of grounds Value of buildings, including dormitories	$75,818,723	$97,251,107	$138,957,329	$143,560,217	$153,881,177	$162,970,002	$195,521,330	$218,327,797
Value of dormitories	...	...	...	...	...	...	...	...
Amount of productive funds	$76,680,076	$90,652,822	$111,986,205	$125,255,284	$133,576,967	$166,193,529	$185,944,668	$206,565,108
RECEIPTS.								
From student fees	$3,764,984	$6,701,802	$8,722,674	$9,751,575	$9,738,718	$11,171,127	$13,089,197	$14,276,584
From productive funds	$4,771,986	$5,084,751	$5,895,122	$6,010,238	$6,414,363	$7,045,479	$8,241,300	$9,282,175
From State or city	$2,103,559	$4,757,340	$4,209,205	$3,592,000	$4,034,438	$4,464,405	$6,437,498	$9,122,903
From Federal Government	...	$2,407,971	$3,523,791	$2,540,513	$2,463,900	$2,984,177	$2,949,598	$3,912,993
From private benefactions:								
For increase of endowment	...	...	...	...	...	...	...	...
For other purposes	...	...	...	...	...	...	...	...
Total benefactions	$6,309,731	$6,684,585	$9,394,423	$9,050,106	$8,204,281	$11,995,463	$17,039,967	$13,700,559
From all other sources	...	$1,808,466	$3,897,180	$3,006,849	$3,311,823	$2,893,275	$3,145,656	$3,784,538
Total receipts as distributed above [1]	$16,950,260	$27,444,915	$35,642,395	$33,951,281	$34,167,523	$40,553,926	$50,903,211	$54,029,752
Total receipts, excluding endowment	...	...	...	...	...	...	...	...
Total receipts, including endowment	$18,614,994	$27,894,163	$35,642,395	$33,951,281	$34,167,523	$40,553,926	$50,903,211	$54,029,752
DERIVATIVE STATISTICS.								
Per cent of all students in:								
Preparatory departments	33.1	30.5	30.0	28.1	28.5	28.6	26.8	26.9
Collegiate departments	41.7	43.8	48.9	47.5	50.9	52.8	54.0	53.7
Graduate departments	1.5	1.8	2.0	1.7	3.0	3.0	2.8	2.9
Professional departments	10.0	11.2	11.6	13.1	14.6	15.4	15.0	14.2
Other departments	...	...	...	...	...	...	...	...
Index numbers of students:								
In public institutions	...	...	...	100.0	114.5	130.8	151.1	169.7
In private institutions	...	...	...	100.0	100.1	106.6	111.5	117.8
Per cent of collegiate and resident graduate students:								
Men	68.3	68.6	67.6	66.9	66.3	65.6	65.8	67.2
Women	31.7	31.4	32.4	33.1	33.7	34.4	34.2	32.8
Per cent of all students:								
Men	65.6	66.2	68.3	65.9	68.7	69.1	69.6	69.9
Women	34.4	33.8	31.7	34.1	31.3	30.9	30.4	30.1
Per cent of first degrees conferred on—								
Men	...	...	69.1	71.6	69.3	68.1	66.4	64.6
Women	...	...	30.9	28.4	30.7	31.9	33.6	35.4

[1] These totals include only the amounts distributed showing the source of revenue. Institutions reporting only the aggregate amount of income for the year are not included in this total.

TABLE 1.—*Review of statistics of universities, colleges, and technological schools, including women's colleges but excluding independent professional schools, 1890–1918*—PART II—Continued.

Items.	1890	1892	1894	1896	1898	1900	1902	1904
DERIVATIVE STATISTICS—continued.								
Per cent of graduate degrees conferred on—								
Men	.....	.....	80.8	82.6	83.0	83.4	80.4	81.4
Women	.....	.....	19.2	17.4	17.0	16.6	19.6	18.6
Per cent of instructors—								
Men	86.3	77.6	77.0	77.7	79.1	79.8	80.3	80.4
Women	13.7	22.4	23.0	22.3	20.9	20.2	19.7	19.6
Per cent of receipts derived from—								
Student fees	22.2	24.4	24.5	28.7	28.5	27.5	25.7	26.4
Productive funds	28.2	18.5	16.5	17.7	18.8	17.3	16.2	17.1
State or city	12.4	17.3	11.8	10.6	11.8	11.0	12.6	16.9
Federal Government	.....	8.8	9.9	7.5	7.2	7.4	5.8	7.2
Private benefactions	37.2	24.4	26.4	26.7	24.0	29.6	33.5	25.4
All other sources	.....	6.6	10.9	8.8	9.7	7.2	6.2	7.0
Income per student (total)	$68	$124	$134	$129	$138	$145	$162	$178
Productive funds per student (total)	$490	$528	$610	$646	$712	$843	$891	$912
Volumes in the library per school	6,881	7,531	9,421	10,388	11,773	13,199	15,333	17,630
Average value of all property per school, excluding productive funds	$129,183	$164,165	$211,077	$235,421	$265,671	$292,773	$362,477	$426,114
Average value of all property per student (total)	$542	$635	$834	$842	$951	$986	$1,108	$1,142
Population—23 years of age	1,131,822	1,195,840	1,259,857	1,323,874	1,387,891	1,451,909	1,519,926	1,587,943
Per cent of population (23 years of age) receiving first degrees [2]	1,264	1,294	1,599	1,714	1,666	1,744	1,759	1,771
Population 19-23 years of age	4,614,023	4,876,835	5,139,647	5,402,459	5,665,271	5,928,085	6,190,897	6,453,709
Per cent of population (19-23) in college (all departments)	3,391	3,518	3,572	3,560	3,310	3,321	3,372	3,509

Items.	1906	1908	1910	1912	1914	1916	1918
PROPERTY.							
Number of fellowships and scholarships	13,042	12,546	9,973	13,989	15,125	17,774	16,609
Volumes in the libraries	11,868,927	13,216,094	14,059,180	16,275,225	18,199,354	20,234,734	23,025,736
Value of apparatus, machinery, library, and furniture	$46,341,757	$29,927,422	$53,856,955	$66,171,875	$70,113,586	$80,554,609	$89,766,793
Value of grounds	$261,090,825	$64,202,256	$67,688,727	$80,433,815	$87,757,360	$87,607,540	$104,069,481
Value of buildings, including dormitories		$232,905,285	$211,440,008	$262,429,456	$281,665,426	$307,159,298	$329,987,558
Value of dormitories	.....	.....	$17,153,536	$37,056,219	$47,016,876	$45,748,799	$55,143,845
Amount of productive funds	$248,430,394	$272,207,309	$259,376,878	$357,048,919	$362,742,823	$425,245,270	$481,085,952
RECEIPTS.							
From student fees	$16,340,101	$22,225,525	$24,555,373	$28,792,318	$32,349,711	$36,133,969	$38,278,314
From productive funds	$10,241,539	$11,058,327	$12,276,200	$14,225,998	$17,229,694	$18,983,868	$22,424,014
From State or city	$11,665,397	$15,518,857	$19,720,899	$24,144,353	$29,510,425	$32,204,111	$40,391,938
From Federal Government	$2,600,714	$4,521,181	$4,607,298	$5,499,927	$5,227,626	$6,258,931	$9,971,969
From private benefactions:							
For increase of endowment	.....	$7,341,519	$10,496,367	$14,678,308	$18,422,856	$19,776,363	$16,746,140
For other purposes	.....	$7,479,436	$9,575,648	$10,104,782	$8,247,161	$10,419,643	$10,704,805
Total benefactions	$17,716,605	$14,820,955	$20,072,015	$24,783,090	$26,670,017	$30,196,006	$27,450,945

From all other sources	$3,935,575	$5,297,852	$7,052,949	$7,068,409	$9,591,784	$9,850,326	$15,284,375
Total receipts as distributed above[1]	$62,499,931	$73,442,197	$88,284,734	$104,514,095	$120,579,257	$133,627,211	$153,801,555
Total receipts, excluding endowment	....	$66,185,678	$77,873,367	$89,835,787	$102,156,401	$113,850,848	$137,055,415
Total receipts, including endowment	$62,499,931	$73,527,197	$88,369,734	$104,514,095	$120,579,257	$133,627,211	$153,801,555
DERIVATIVE STATISTICS.							
Per cent of all students in:							
Preparatory departments	28.2	24.5	22.0	20.0	15.5	13.6	11.9
Collegiate departments	54.5	50.7	56.1	58.7	60.7	62.8	63.9
Graduate departments	3.0	3.0	3.3	3.7	3.9	4.3	3.8
Professional departments	13.2	12.6	14.3	11.8	11.1	10.6	12.9
Other departments	....	....	....	....	11.2	10.9	9.6
Index numbers of students:							
In public institutions	198.7	232.1	260.5	292.0	338.3	413.1	409.0
In private institutions	136.0	144.0	164.2	173.5	180.5	213.6	207.2
Per cent of collegiate and resident graduate students:							
Men	65.8	66.1	65.1	63.4	64.4	63.2	56.2
Women	34.2	33.9	34.9	36.6	35.6	36.8	43.8
Per cent of all students:							
Men	68.7	73.4	73.1	65.4	65.0	64.4	59.6
Women	31.3	26.6	26.9	34.6	35.0	35.6	40.4
Per cent of first degrees conferred on:							
Men	66.6	65.7	67.3	61.8	62.1	64.7	52.5
Women	33.4	34.3	33.7	38.2	37.9	35.3	47.5
Per cent of graduate degrees conferred on:							
Men	80.2	78.1	76.1	83.7	79.3	76.5	66.7
Women	19.8	21.9	23.9	16.3	20.7	23.5	33.3
Per cent of instructors:							
Men	80.2	87.7	88.4	81.6	81.1	81.7	80.8
Women	19.8	12.3	11.6	18.4	18.9	18.3	19.2
Per cent of receipts derived from:							
Student fees	26.1	30.3	27.8	27.5	26.8	27.0	24.9
Productive funds	16.4	15.1	13.9	13.6	14.3	14.2	14.6
State or city	18.7	21.1	22.3	23.1	24.5	24.1	26.3
Federal Government	4.2	6.1	5.2	5.3	4.3	4.7	6.5
Private benefactions	28.3	20.2	22.8	23.7	22.1	22.6	17.8
All other sources	6.3	7.2	8.0	6.8	8.0	7.4	9.9
Income per student (total)	$173	$250	$258	$282	$305	$294	$365
Productive funds per student (total)	$961	$1,027	$946	$1,121	$1,083	$1,099	$1,282
Volumes in the library per school	19,082	23,065	23,354	27,307	32,098	35,252	41,563
Average value of all property per school, excluding productive funds	$494,265	$570,742	$553,132	$686,301	$775,196	$828,086	$945,530
Average value of all property per student (total)	$1,189	$1,234	$1,215	$1,285	$1,312	$1,228	$1,396
Population—23 years of age	1,655,960	1,723,977	1,791,996	1,860,013	1,928,030	1,996,047	2,064,064
Per cent of population (23 years of age), receiving first degrees[2]	1,780	1,803	1,907	1,979	2,180	2,189	1,837
Population 19-23 years of age	6,716,521	6,979,333	7,242,147	7,504,959	7,767,771	8,030,583	8,293,397
Per cent of population (19-23) in college (all departments)	3,850	3,797	3,785	4,243	4,312	4,820	4,526

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[1] These totals include only the amounts distributed showing the source of revenue. Institutions reporting only the aggregate amount of income for the year are not included in this total.

[2] Takes into consideration first degrees in all professional schools. See Table 6.

TABLE 2.—*Number of collegiate and resident graduate students in universities, colleges, and technological schools from 1889–90 to 1917–18.*

Year.	Universities and colleges.		Colleges for women (Division A).	Colleges for women (Division B).	Schools of technology.		Total number.	
	Men.	Women.	Women.	Women.	Men.	Women.	Men.	Women.
1889–90	38,056	8,075	1,979	10,013	6,870	707	44,926	20,874
1890–91	40,089	9,439	2,265	9,851	6,131	481	46,220	22,036
1891–92	45,032	10,390	2,636	9,878	6,131	481	51,163	23,385
1892–93	46,689	11,489	3,198	9,102	8,616	843	55,305	24,632
1893–94	50,297	13,144	3,578	10,559	9,517	1,376	59,814	28,657
1894–95	52,586	14,298	3,667	10,668	9,467	1,106	62,053	29,739
1895–96	56,556	16,746	3,910	10,513	8,587	1,065	65,143	32,244
1896–97	55,755	16,536	3,913	10,929	8,907	1,094	64,662	32,472
1897–98	58,407	17,765	4,416	10,570	8,611	1,289	67,018	34,040
1898–99	58,467	18,948	4,593	10,866	9,038	1,339	67,505	35,746
1899–1900	61,812	20,452	4,872	11,006	10,347	1,440	72,159	37,770
1900–1901	65,069	21,468	5,260	11,021	10,403	1,151	75,472	38,900
1901–2	66,325	22,507	5,549	11,311	11,808	1,202	78,133	40,569
1902–3	69,178	24,863	5,749	10,995	13,216	1,124	82,394	42,731
1903–4	71,817	24,413	6,341	10,034	14,189	1,269	86,006	42,057
1904–5	77,250	26,739	6,305	11,319	14,911	1,199	92,161	45,562
1905–6	[1] 97,738	[1] 31,443	6,653	12,730	(1)	(1)	97,738	50,826
1906–7	[1] 96,575	[1] 32,850	7,612	12,663	(1)	(1)	96,575	53,125
1907–8	[1] 106,945	[1] 35,265	7,977	11,573	(1)	(1)	106,945	54,815
1908–9	[1] 119,480	[1] 42,328	8,458	12,211	(1)	(1)	119,480	62,997
1909–10	[1] 119,578	[1] 43,441	8,874	11,690	(1)	(1)	119,578	64,005
1910–11	[1] 119,026	[1] 64,546	(2)	(2)	(1)	(1)	119,026	64,546
1911–12	[1] 125,750	[1] 72,703	(2)	(2)	(1)	(1)	125,750	72,703
1912–13	[1] 128,644	[1] 73,587	(2)	(2)	(1)	(1)	128,644	73,587
1913–14	[1] 139,373	[1] 77,120	(2)	(2)	(1)	(1)	139,373	77,120
1914–15	[1] 152,307	[1] 84,861	(2)	(2)	(1)	(1)	152,307	84,861
1915–16	[1] 164,075	95,436	(2)	(2)	(1)	(1)	164,075	95,436
1916–17[3]	....	....	....	....	....	....	....	....
1917–18	[1] 142,768	111,345	(2)	(2)	(1)	(1)	142,768	111,345

[1] Students in schools of technology are tabulated in universities and colleges.
[2] Students in colleges for women are tabulated in universities and colleges.
[3] Statistics for 1916–17 were not collected.

SIZE OF INSTITUTIONS.

In figure 1 the 672 universities, colleges, and professional schools have been distributed according to the total number of students enrolled in each. The distribution has been made by groups of 100. In the second and largest group, 144 institutions are included, i. e., these institutions enroll from 101 to 200 students each. Over half of the institutions do not enroll more than 300 students. Altogether, 37 institutions enroll over 2,000 students. Of these, 13 enroll from 2,001 to 3,000 students; 9, from 3,001 to 4,000 students; 7, from 4,001 to 5,000 students; and 8, over 5,000 students. From these figures, therefore, it can be seen that there are many very small and a few very large colleges and universities.

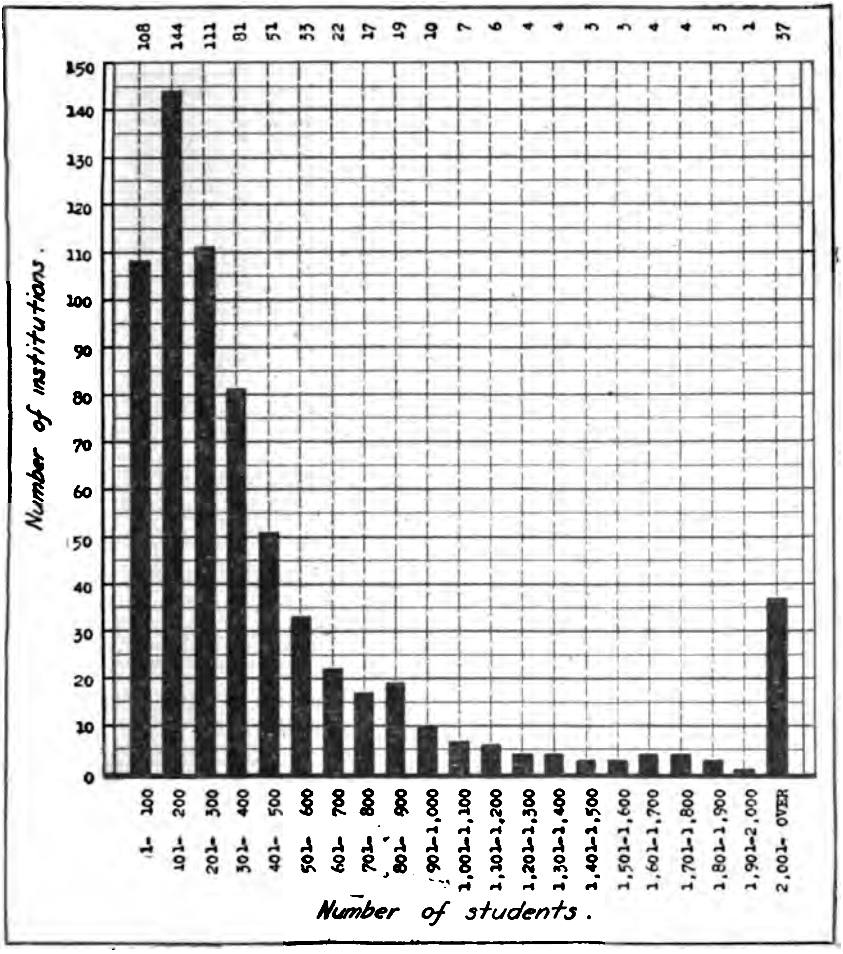

FIG. 1.—Distribution of 672 universities, colleges, and professional schools according to the total number of students enrolled, 1917-18.

TABLE 3.—*Method used in securing the data used in the construction of figure 2.*

Groups.	Per cent of institutions in each group.	Accumulated percentages of institutions.	Enrollment in institutions of each group.	Per cent of total enrollment in each group.	Accumulated percentages of enrollment.
1	2	3	4	5	6
1	5	5	138,767	36.9	36.9
2	5	10	52,493	14.0	50.9
3	5	15	30,697	8.2	59.1
4	5	20	24,505	6.5	65.6
5	5	25	18,873	5.0	70.6
6	5	30	16,272	4.3	74.9
7	5	35	13,740	3.7	78.6
8	5	40	12,540	3.3	81.9
9	5	45	10,746	2.9	84.8
10	5	50	9,813	2.6	87.4
11	5	55	8,618	2.3	89.7
12	5	60	7,601	2.0	91.7
13	5	65	6,602	1.8	93.5
14	5	70	5,964	1.6	95.1
15	5	75	5,029	1.4	96.5
16	5	80	4,417	1.2	97.7
17	5	85	3,544	.9	98.6
18	5	90	2,671	.7	99.3
19	5	95	1,772	.5	99.8
20	5	100	695	.2	100.0
Total	100	....	375,359	100.0	....

The effect of this inequality in the distribution of students among the colleges and universities is perhaps best demonstrated in figure 2. Here it is seen that 10 per cent of the institutions enroll 50 per cent of the students, and one-half of the schools enroll about 87 per cent of the students. The "bowing" of the *curve of actual distribution* away from the *line of equal distribution* indicates the degree of inequality in the distribution of students. If the students were equally distributed among the colleges, universities, and professional schools, the curve and the diagonal line would coincide.

INSTRUCTORS.

In the universities, colleges, and professional schools an aggregate of 36,522 instructors are employed. The teaching staff consists of 29,509 men and 7,013 women. These instructors are distributed as follows: Preparatory departments, 3,027; collegiate departments, 23,318; professional departments, 10,183; and all other departments, 1,547. Almost 60 per cent of the instructors in preparatory departments are men. In collegiate departments almost 79 per cent of the instructors are men. In professional schools and departments almost 98 per cent of the teaching staff consist of men. Altogether, almost 81 per cent of all teachers in universities, colleges, and professional schools are men. It is seen, therefore, that the teaching staff in these higher educational institutions consists largely of men, there being about four men to one woman. These percentages are significant in view of the fact that in public high schools only 35 per cent of the teachers are men, and in the elementary schools only 13.4 per cent of the teachers are men. There is a tendency, therefore, for women to monopolize the elementary and secondary school work, and for men to control the work in the higher institutions.

This tendency in these higher institutions is becoming more pronounced from year to year, as shown in figure 3. A comparison of the two curves, for men and women instructors, reveals the fact that in general the percentage of men instructors in colleges and universities has been steadily increasing since 1892, while the proportion of women teachers has decreased correspondingly. It is also evident that war conditions did not materially affect the teaching staff in these higher institutions, since the proportion of men decreased only very slightly in 1918. It is apparent, therefore, that women are not very generally employed in the higher institutions. About one-half as many women as men receive graduate degrees from our colleges

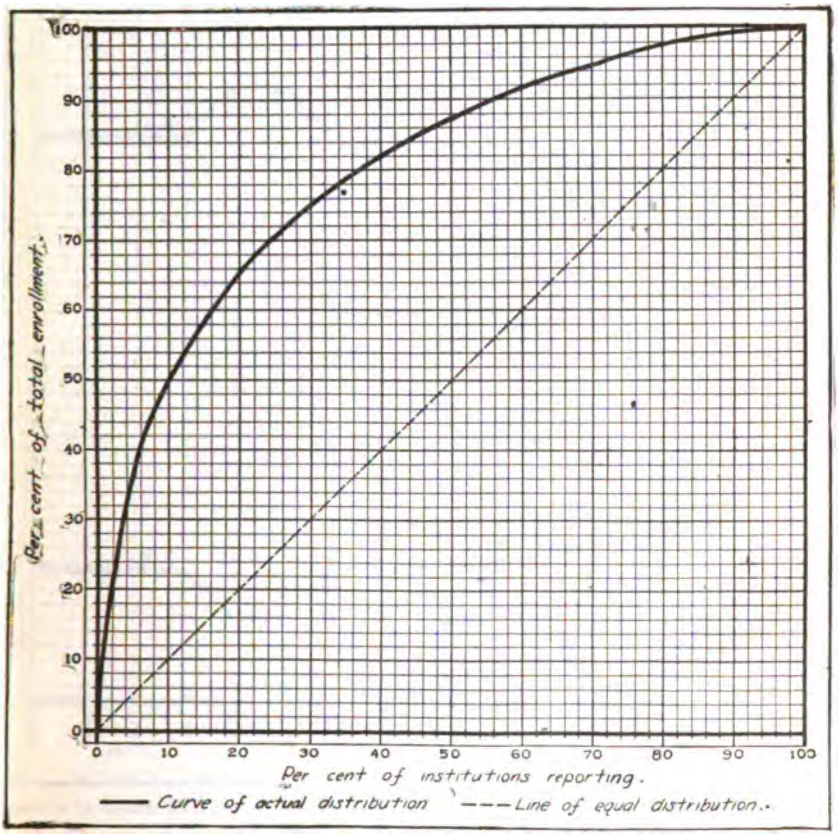

FIG. 2.—Curve showing the distribution of students among the universities, colleges, and professional schools, 1917-18.

and universities, but only about one-fourth as many teach in these higher institutions. On the other hand, about eight times as many men as women receive the Ph. D. degree conferred on examination, yet only four times as many become teachers in these higher institutions. It should be remembered, however, in this connection that more men than women attend universities and colleges.

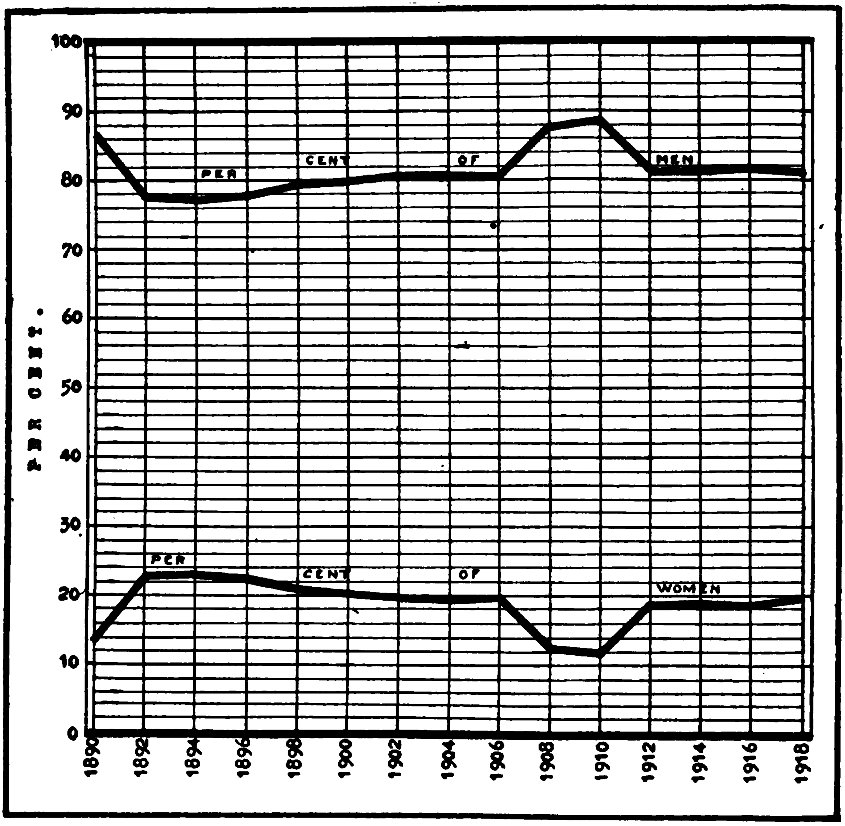

FIG. 3.—Percentage of men and women instructors in universities, colleges, and technological schools, 1917-18.

ATTENDANCE AT HIGHER INSTITUTIONS.

While the total collegiate and graduate attendance at universities, colleges, and professional schools has increased from 156,449 in 1890 to 375,359 in 1918, or over 139 per cent, the rate of increase is not significant unless comparisons be made with other concomitant rates of increase. For example, has college enrollment kept pace with the increase in public-school enrollment or with the increase in the total population? To answer this question figure 3 has been prepared. In order to show approximate comparative rates of increase, the total collegiate and resident graduate enrollment in colleges and universities, the public high-school enrollment, and the total population have been reduced to index numbers. The public high-school enrollment for each biennium from 1890 to 1918 has been divided by the corresponding enrollment in 1900. Thus in 1918 the high-school enrollment was 810 per cent of what it was in 1890, or it increased 710 per cent. The index for 1918 is, therefore, 810. The index numbers

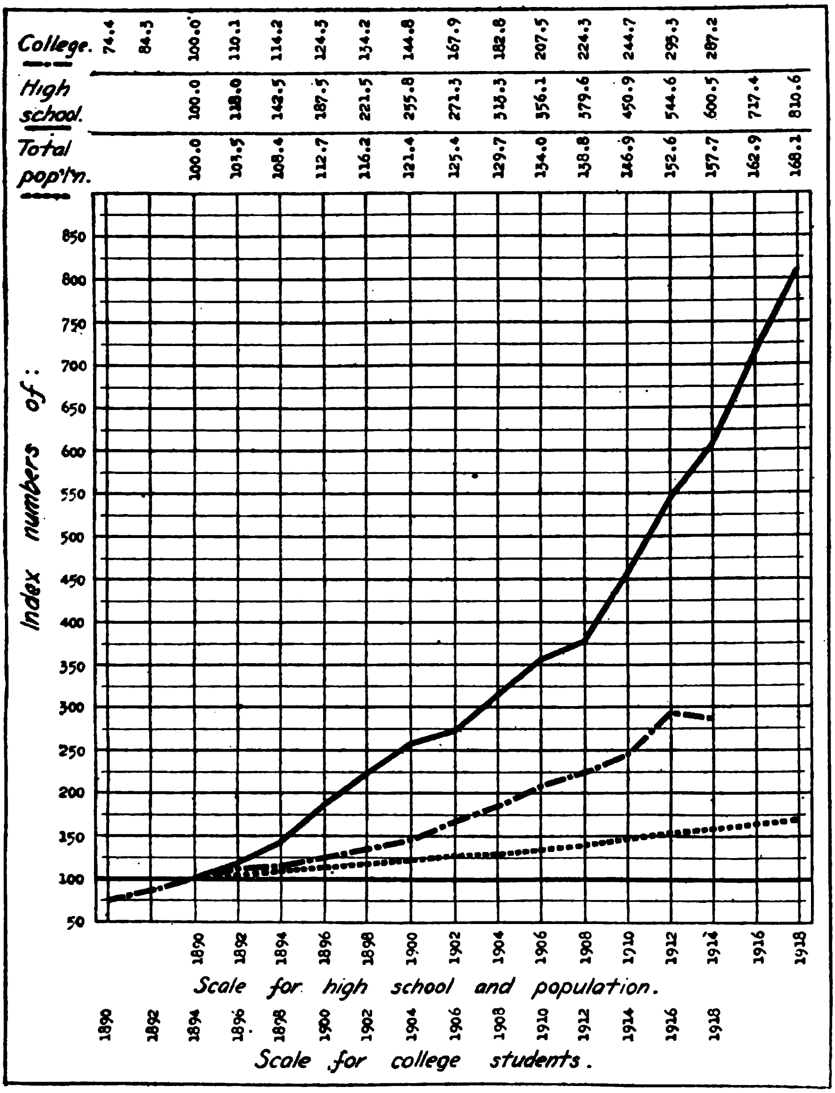

FIG. 4.—Index numbers showing the comparative rates of increase in the total population, the total high school enrollment, and the total number of students in collegiate and resident graduate departments of universities, colleges, and technological schools from 1890 to 1918. The curve for college students has been shifted to the left to compensate for *lag*.

for the total population have been secured in a similar manner, the index for 1890 being 100 and that for 1918 being 168, representing an increase of 68 per cent within this period. As high-school students do not enter college, presumably, for four years after they enter high school, the curve for college enrollment has been displaced by this interval to compensate for *lag*. To interpret the curves, consider for instance the interval 1898 to 1900. The slopes of the three curves in this section of the graph are different, the high-school curve showing the steepest slope and, therefore, the greatest rate of increase; the "population" curve having the least inclined slope and therefore, the smallest rate of increase, while the "college" curve occupies an intermediate slope. The relative positions of the curves one above the other do not indicate rates of advancement; only the corresponding slopes of similar sections of the curves show this tendency to increase.

Thus, it is seen that the high-school enrollment has increased more rapidly than enrollment in colleges and universities, while the enrollment in college has more than kept pace with the increase in population. It is evident, therefore, that colleges and universities have not succeeded in more recent years in drawing as large a proportion of high-school students (or graduates) as they formerly did. The multiplication of high schools in the attempt to give every boy and girl the advantages of a high-school education has not resulted in as large a proportion of subsequent enrollment in collegiate and graduate courses. The vocational or trade courses now offered by some of the larger high schools may partly account for the decreasing proportion of high-school students entering college. One who has completed a commercial course in high school is not so likely to enter college after graduation as a student who has taken the purely academic or college preparatory course. As the high schools become more and more vocationalized the proportion of graduates going to college may be expected to decrease. While the index curves do not measure precisely the decreasing proportion of high-school graduates going to college, they do indicate that this tendency unmistakably exists.

A clearer conception as to attendance at colleges and universities may be gained by comparing the enrollment with the corresponding population which might be in college if all attended. Figure 5 shows such comparisons for biennial periods from 1890 to 1918. It is assumed that it takes four years to complete a college course, and that the most usual ages when young men and women attend college are from 19 to 23. Some, of course, will attend earlier and others later in life than at this time, but the age group chosen can not be far from the average. At any rate the total population for any other similar age group would be about the same as the total population 19 to 23 years of age. The total enrollment in all departments of universities, colleges, and professional schools has been compared with this age group. The continuous curve in figure 5 varies from 3.3 per cent in 1898, when the smallest percentage of the population attended college, to 4.8 per cent in 1916, when the largest percentage attended. The drop in attendance in 1918 was caused by the war. The general direction of this curve shows in no unmistakable way that the Nation

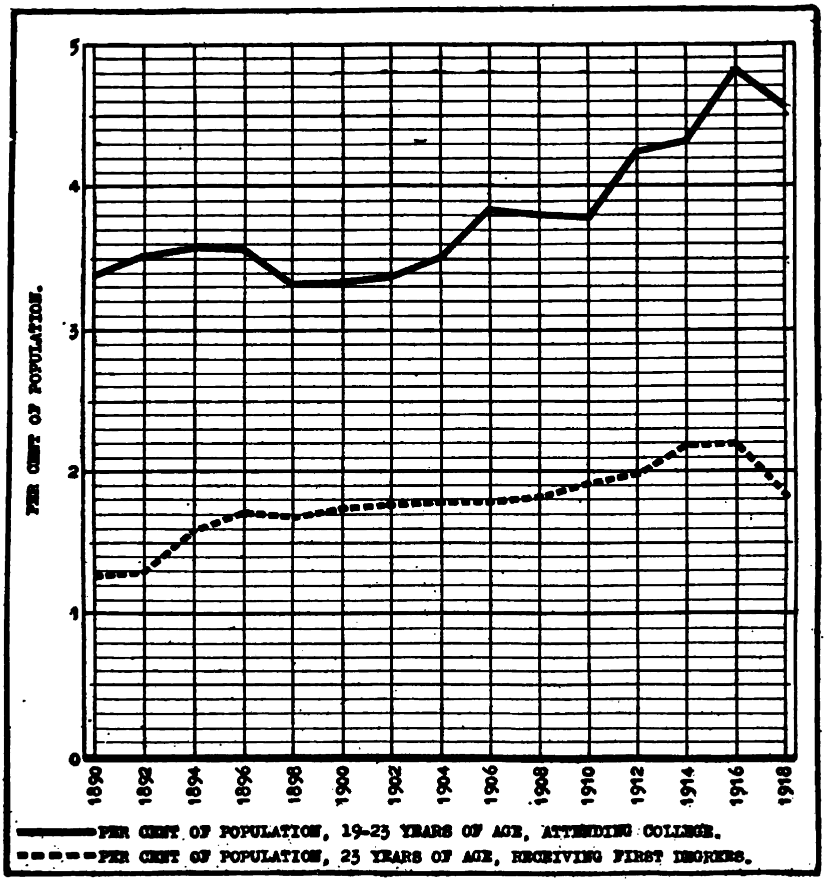

FIG. 5.—Per cent of population attending college and graduating from college, 1890-1918.

is becoming better educated from year to year. Further proof of this fact is given in the second or dotted curve in this diagram which shows the percentage of the population 23 years of age receiving baccalaureate or first degrees for each biennial date. The number of first degrees includes first degrees granted by professional schools as well as baccalaureate degrees granted by universities, colleges, and technological schools. In 1890 less than 1.3 per cent of the population 23 years of age was graduating from college. In 1916 almost 2.2 per cent of the population of this age received first degrees. Within this period of 26 years the proportion of college graduates almost doubled. The drop in 1918 was undoubtedly due to war conditions. This curve is decidedly consistent with figure 11, which shows that 231 persons out of each 1,000 entering the first grade will later graduate from college.

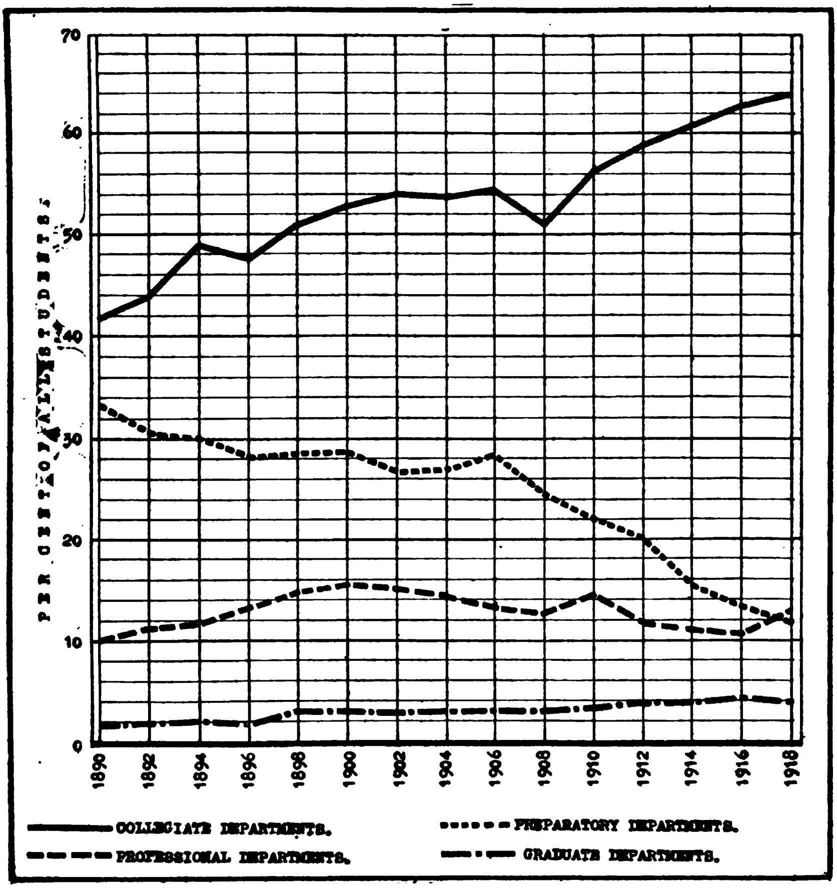

FIG. 6.—Percentages of all students in the various departments in universities, colleges, and technological schools, 1890–1918.

ENROLLMENT BY DEPARTMENTS.

Within the last 28 years considerable change has taken place in the distribution of students among the various departments. This change has been wrought very largely by the multiplication of secondary schools throughout the country, thereby causing a diminution in the amount of preparatory or secondary school work required of the colleges. As shown in figure 6, the proportion of preparatory students has decreased from about 33 per cent in 1890 to a little less than 12 per cent in 1918. In other words, the proportion of preparatory students is now only about one-third of what it was 28 years ago. This decrease is compensated for by an increase in the percentage of collegiate students. In 1890 about 42 per cent of the total enrollment consisted of collegiate students, while in 1918 the corresponding proportion was about 64 per cent, or an increase of over 50 per cent. No marked change has taken place in the proportion of students in professional departments, in 1900 the proportion being highest and in 1916 lowest. The upward tendency in 1918 is due to the inclusion of students in independent professional schools not represented in the diagram for the preceding years. The increasing rigidity of entrance requirement to professional departments has probably caused the slight decrease in the proportion of students registered in such departments since 1900.

The lower curve in the diagram representing graduate students is significant. The proportion of graduate students in colleges and universities increased from 1.5 per cent in 1890 to 4.3 per cent in 1916, or almost threefold. It is clearly evident that colleges and universities are devoting an increasing amount of time to graduate work from year to year. This figure does not represent special students or students registered in other departments.

ENROLLMENT IN PUBLIC AND PRIVATE INSTITUTIONS.

The relative advancement of public and private universities, colleges, and technological schools is clearly exhibited in figure 7. This diagram represents the number of students enrolled in collegiate and graduate departments only. To secure the index numbers for each curve the enrollment for each biennium has been divided by the corresponding enrollment for 1896. The curve representing public institutions has risen more rapidly at every interval than that representing private institutions. In other words the enrollment in private institutions has increased 113 per cent in 20 years, while that in public institutions has increased 309 per cent. The rate of increase for the public institutions has been almost three times that for private institutions. It should be carefully noted that this diagram represents only the rates of increasing enrollments and not the actual enrollment in public and private institutions. By reference to Table 1 it is seen that in 1916 the private institutions enrolled 152,274 students, while those under public control registered only 107,237 students in collegiate and graduate departments. From these figures it is seen, therefore, that the private institutions register about 42 per cent more students than the public institutions. From the diagram it is found that the public institutions are "growing" almost three times as rapidly as the private colleges and universities.

PROPORTION OF MEN AND WOMEN.

Table 1 shows the number of men and women students in universities, colleges, and technological schools. For both sexes there has been an increase since 1890. In collegiate and graduate departments the number of men increased from 44,926 in 1890 to 164,075 in 1916, while the number of women students increased from 20,874 to 95,436 within the same period. Expressed in percentages, the men increased 265 per cent and the women 357 per cent. Considering all students in all departments, the men have increased only 143 per cent and the women only 156 per cent within this period of 26 years. In both computations the women have increased more rapidly than the men. This change in the personnel of the student body is best exhibited in figure 8. The two curves representing collegiate and resident graduate students possess remarkable regularity, approaching each other with almost mathematical precision. In 1890, of these college students 68.3 per cent were men and only 31.7 per cent women, but in 1916 only 63.2 per cent were men and 36. 8 per cent were women.

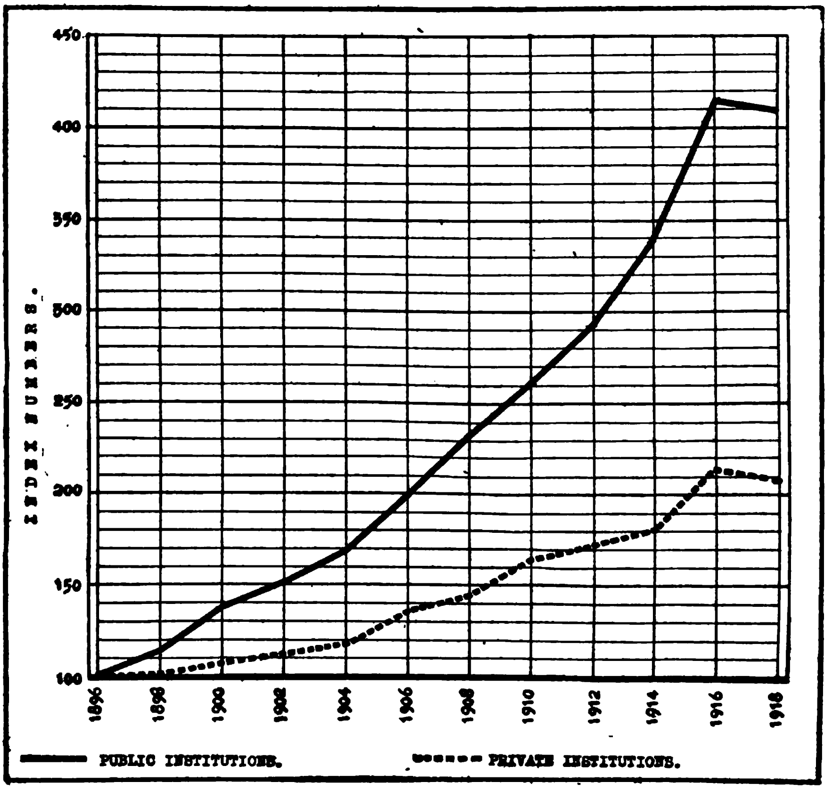

FIG. 7.—Index numbers of students in public and private universities, colleges, and technological schools showing the rate of increase. (For data see Table 1.)

The abrupt changes evident in 1918 are due to war conditions and can not be taken to indicate general tendencies. When all students in all departments are considered, there has been little change in the proportion of men and women from 1890 to 1916. The general tendency taken by the curve representing purely collegiate and graduate students seems to predict a time when as many women as men will attend college. This prediction is also supported by the fact that more girls than boys graduate annually from our high schools and are, therefore, prepared in greater numbers to enter college.

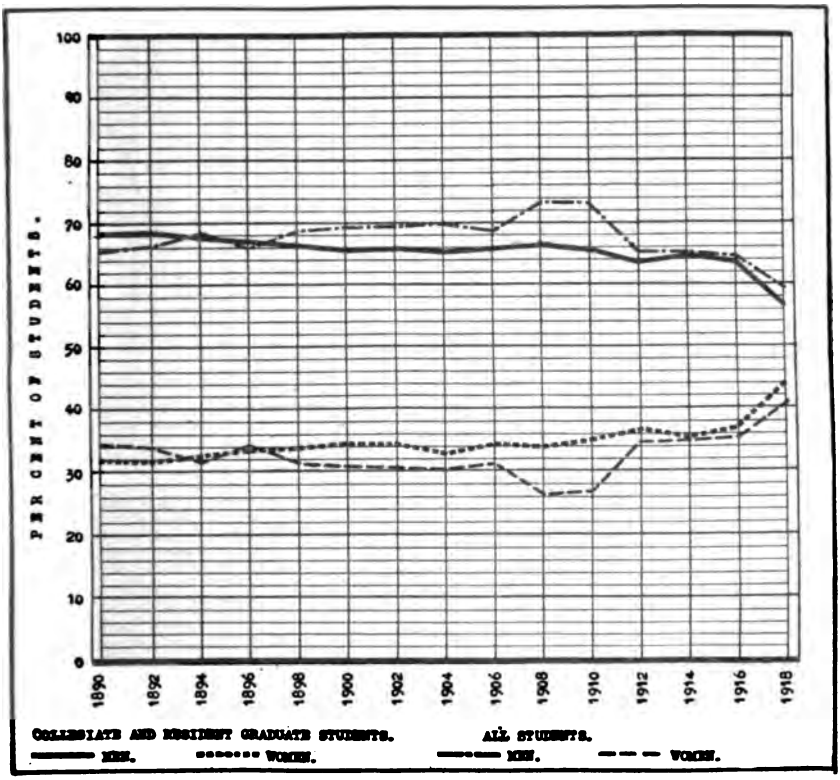

FIG. 8.—Percentages of men and women students in universities, colleges, and technological schools, 1890–1918. (For data see Table 1.)

DEGREES CONFERRED.

Tables 18, 19, 20, 21, 22, and 23 show the number and kinds of degrees conferred in 1918 by the 672 institutions. There were 28,052 baccalaureate, 3,480 graduate, and 736 honorary degrees conferred. The degree of doctor of philosophy was conferred on examination by 46 institutions on 499 men and 63 women, as shown in Table 4.

TABLE 4.—*Institutions conferring the Ph. D. degree on examination in 1918.*

States.	Institutions.	Men.	Women.
California	University of California	15	3
Connecticut	Hartford Theological Seminary	1	0
Do	Yale University	32	5
District of Columbia.	American University	4	0
Do	Catholic University of America	13	2
Do	George Washington University	7	0
Illinois	University of Chicago	71	6
Do	Northwestern University	5	0
Do	University of Illinois	31	2
Indiana	Indiana University	1	1
Do	University of Notre Dame	1	0
Iowa	State University of Iowa	9	3
Maryland	Johns Hopkins University	11	1
Massachusetts	Boston University	4	1
Do	Harvard University	45	0
Do	Massachusetts Institute of Technology	4	0
Do	Clark University	5	1
Michigan	University of Michigan	11	2
Minnesota	University of Minnesota	10	1
Missouri	University of Missouri	6	1
Do	Washington University	2	0
Nebraska	University of Nebraska	3	1
New Jersey	Rutgers College	4	1
Do	Princeton University	10	0
New York	Cornell University	32	4
Do	Columbia University	73	10
Do	Fordham University	3	0
Do	New York University	10	1
Do	New York State College of Forestry	2	0
Do	Syracuse University	4	1
North Carolina	University of North Carolina	1	0
Ohio	University of Cincinnati	1	1
Do	Ohio State University	9	0
Pennsylvania	Moravian College and Seminary	1	0
Do	Bryn Mawr College	0	6
Do	Grove City College	1	0
Do	Dropsie College	2	0
Do	University of Pennsylvania	19	5
Do	University of Pittsburgh	2	0
Rhode Island	Brown University	8	3
South Dakota	University of South Dakota	1	0
Texas	Rice Institute	1	0
Virginia	University of Virginia	1	0
Washington	University of Washington	1	0
Wisconsin	University of Wisconsin	21	1
Do	Mission House	1	0
	Total	499	63

In Table 1 the number of degrees conferred by universities, colleges, and technological schools is shown for biennial periods since 1890. The total number of first degrees, professional and collegiate, conferred since 1870 is exhibited in Table 6. From 1890 to 1916 the number of baccalaureate degrees conferred by nonprofessional departments increased from 7,319 to 31,826, or 335 per cent. During this interval the population increased only 63 per cent. The rate of increase in the number of first-degree college graduates has been over 5 times as great as that for the total population during this interval of 26 years.

TABLE 5.—*Number of college graduates receiving first degrees living at each decennial period, omitting those graduating prior to 1870.*

Years.	Total population of United States.	Number of graduates.	Estimated number of graduates living at each date.					Death rates.		
			1880	1890	1900	1910	1918	Age.	Rate per 1,000.[1]	Still living per 1000.
1870	38,558,371	[2] 9,371	8,818	8,079	7,087	5,531	3,850	23	5.29	1,000.0
1871	39,500,500	[2] 12,061	11,430	10,504	9,269	7,362	5,245	24	5.42	994.7
1872	40,477,000	[2] 7,484	7,141	6,581	5,840	4,713	3,430	25	5.54	989.2
1873	41,490,442	[2] 10,065	9,667	8,935	7,968	6,525	4,843	26	5.67	983.8
1874	42,570,731	[2] 10,465	10,115	9,375	8,401	6,971	5,268	27	5.85	978.2
1875	43,700,554	[2] 10,627	10,335	9,806	8,645	7,260	5,578	28	6.06	972.5
1876	44,881,700	[2] 10,463	10,235	9,538	8,620	7,319	5,727	29	6.28	966.6
1877	46,112,700	8,685	8,544	7,984	7,243	6,211	4,944	30	6.51	960.5
1878	47,397,151	9,639	9,535	8,933	8,132	7,034	4,151	31	6.78	954.2
1879	48,744,700	9,894	9,842	9,242	8,441	7,356	6,039	32	7.09	947.7
1880	50,155,783	10,353	10,353	9,742	8,925	7,830	6,519	33	7.40	941.0
1881	51,274,900	12,093		11,461	10,532	9,293	7,840	34	7.72	934.1
1882	52,441,700	[2] 12,357		11,791	10,867	9,642	8,231	35	8.04	926.8
1883	53,654,100	12,620		12,122	11,203	9,991	8,622	36	8.33	919.3
1884	54,919,358	10,801		10,440	9,676	8,671	7,555	37	8.59	911.6
1885	56,221,868	12,637		12,289	11,423	10,280	9,037	38	8.84	903.9
1886	57,447,100	11,389		11,141	10,382	9,383	8,311	39	9.11	895.8
1887	58,712,678	11,818		11,627	10,864	9,856	8,787	40	9.39	887.7
1888	59,935,709	13,645		13,498	12,646	11,512	10,320	41	9.72	879.9
1889	60,971,114	13,628		13,556	12,730	11,626	10,473	42	10.09	870.1
1890	62,622,250	14,306		14,306	13,462	12,333	11,163	43	10.52	862.1
1891	63,521,196	15,509			14,698	13,507	12,278	44	10.99	853.7
1892	64,834,561	15,480			14,771	13,613	12,427	45	11.52	843.0
1893	66,087,900	17,204			16,524	15,272	13,995	46	12.08	834.0
1894	67,891,389	20,145			19,472	18,046	16,597	47	12.63	823.9
1895	68,748,950	22,232			21,621	20,096	18,541	48	13.18	813.5
1896	70,595,321	22,689			22,194	20,683	19,143	49	13.77	802.8
1897	71,374,142	23,286			22,909	21,407	19,865	50	14.37	791.7
1898	72,737,100	23,129			22,879	21,436	19,940	51	15.08	780.3
1899	73,960,220	23,944			23,817	22,366	20,853	52	16.01	768.5
1900	75,272,683	25,324			25,324	23,830	22,270	53	17.17	756.3
1901	77,262,743	26,484				25,099	23,510	54	18.49	743.5
1902	78,544,816	26,732				25,507	23,947	55	20.03	729.7
1903	79,900,389	27,585				26,495	24,934	56	21.72	715.1
1904	81,241,246	28,117				27,178	25,631	57	23.37	699.5
1905	82,584,061	29,040				28,241	26,696	58	24.97	683.2
1906	83,935,399	29,484				28,841	27,326	59	26.73	666.1
1907	85,526,761	29,665				29,184	27,710	60	28.58	648.3
1908	86,874,990	31,089				30,753	29,255	61	30.62	629.7
1909	90,161,309	34,838				34,653	33,016	62	32.96	610.4
1910	91,972,266	34,178				34,178	32,613	63	35.55	590.2
1911	93,927,342	34,719					33,348	64	38.25	569.2
1912	95,545,336	36,805					35,576	65	41.06	547.4
1913	97,163,330	39,926					38,828	66	44.08	521.9
1914	98,781,324	42,039					41,123	67	47.41	503.4
1915	100,399,318	42,053					41,372	68	51.12	481.2
1916	102,017,312	43,705					43,233	69	55.14	458.3
1917[2]	103,635,306	40,810					40,594	70	59.52	434.9
1918	105,253,300	37,915					37,915	71	64.29	410.8
Total		[3] 1,058,527	106,015	220,750	406,565	657,084	908,469			

[1] United States Life Tables—Bureau of the Census, 1910, by James W. Glover.

[2] Estimated.

[3] Includes 651,751 collegiate first degrees and 406,776 degrees conferred by professional schools on those who had not previously received collegiate degrees.

Some conception of this rate of increase in the number of graduates may be gained from figure 9. These curves are index curves showing the comparative rates of increase in the total number of graduates receiving first degrees, both collegiate and professional, and in the total population. The original data upon which these curves depend are given in Table 5. The average number of first degrees conferred annually from 1870 to 1874, inclusive, was 9,889; in the interval 1875–1879, 9,862; in 1880–1884, 11,645; in 1885–1889, 12,623; in

1890–1894, 16,529; in 1895–1899, 23,056, in 1900–1904, 26,848; in 1905–1909, 30,823; in 1910–1914, 37,533; and in four-year period 1915–1918, 41,121. The average of these 10 average periods is 16,448. If this general average is divided into the averages for each interval, the index numbers shown at the top of figure 9 are secured. In a similar manner the averages of the total population for these respective intervals are found to be: 40,519,409; 46,167,361; 52,489,168; 58,657,694; 64,991,459; 71,483,147; 78,444,375; 85,816,504; 95,477,920; and 102,826,309. The general average for these groups is found to be 69,687,335. If this general average is divided into the group averages, the index numbers for the total population given at the top of figure 9 are obtained. This method of securing index numbers eliminates irregularities in the curve, thereby showing general trends. The population curve is almost a straight line. The college graduate curve in all intervals, except the first three, rises the more rapidly and almost in a straight line. From 1870–1874 to

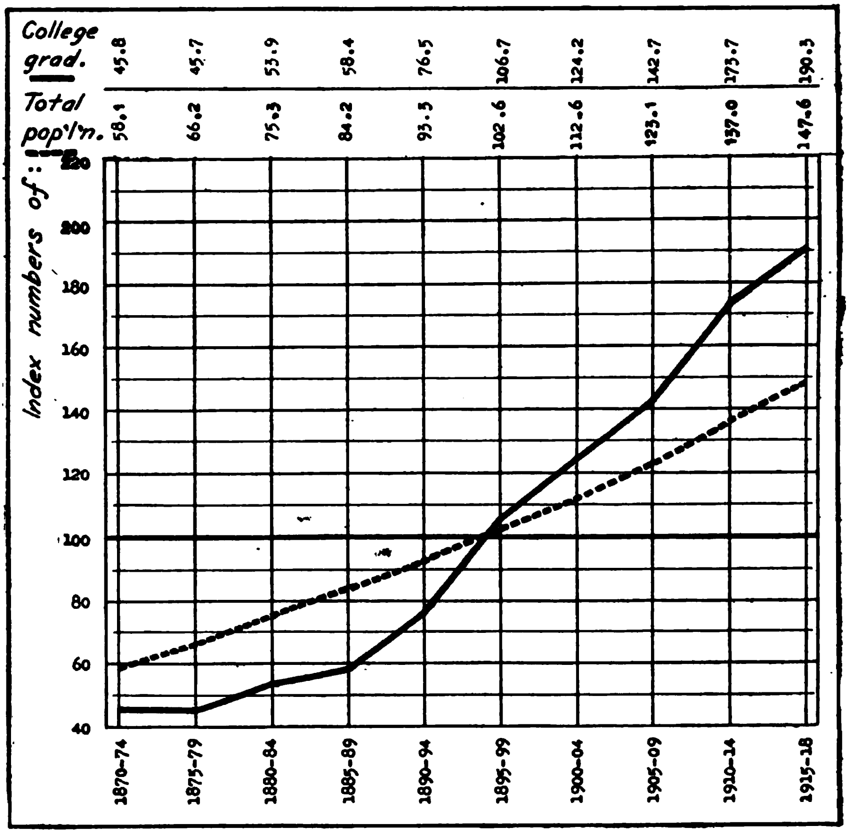

FIG. 9.—Index numbers showing the rates of increase in the total population and in the number of graduates receiving their first degrees, 1870–1918. (For original data see Table 1.)

1885–1889 the slope of the graduate curve is not as steep as that for the population, indicating that the population during this period increased more rapidly than the number of students receiving first degrees from colleges and universities. Since the latter period the number of college graduates has increased much more rapidly than the total population. This fact unmistakably indicates that the

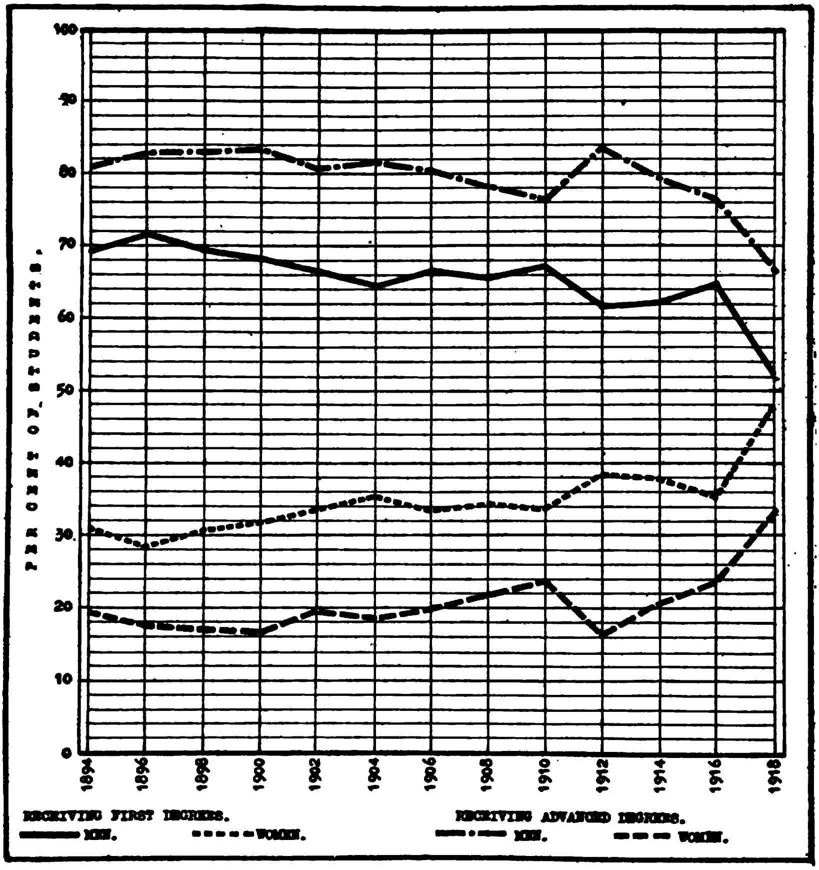

FIG. 10.—Per cent of men and women students receiving first degrees and advanced degrees in universities, colleges, and technological schools, 1894–1918.

Nation is becoming better educated from year to year as measured by the number of graduates receiving first degrees from college.

It is of interest to compare the proportion of men and women receiving degrees from universities and colleges. (Practically all degrees granted by professional schools are conferred on men, and so have not been included in this diagram.) In figure 10 it will be noted that in general the proportion of men receiving both first degrees and advanced degrees has decreased since 1894. Conversely, the proportion of women graduates has increased. These facts show that the rate of increase in college graduation is more favorable to the women. It should be carefully noted in this connection that the number of men receiving first degrees has been about double the number of women receiving baccalaureate degrees, while the number of men receiving advanced degrees has been about four times as great as the number of women receiving such degrees. The effect of the war in reducing the percentage of men receiving degrees in 1918 is clearly in evidence, the curves for men falling abruptly in 1918 and those representing women graduates rising with an equal angle of inflection.

COLLEGE GRADUATES LIVING.

In Table 5 an attempt has been made to secure an approximate statement concerning the number of college graduates in the United States in 1918. This information is not collected decennially by the Bureau of the Census, nor has any attempt been made to enumerate the "brains" of the Nation. From the statistical reports of the Commissioner of Education the number of graduates receiving their first degrees from universities, colleges, technological schools, and professional schools has been ascertained for each year since 1870. In several instances it has been necessary to resort to estimates, which are held to be substantially correct. Only those graduates from professional schools have been included who had not already received a previous degree. It is believed, therefore, that the figures contain no duplicates. No attempt has been made to antedate 1870 in securing the number of college graduates, as all persons graduating before that date are probably over 70 years of age, and very many of them are not now on active duty. Further, as only 41 per cent of the graduating class in 1870 are estimated to be living in 1918, still smaller percentages of those graduating earlier than that date will now be living. Another consideration operating to cancel these omissions is that many college curricula offered in years preceding 1870 do not compare favorably with the diversified and thorough curricula offered to-day. It is believed, therefore, that for all practical purposes the table presents reliable statistics on the number of college graduates living in 1918. The total number of students graduating from college from 1870 to 1918, inclusive, is 1,058,527. Of this number, 908,469 are estimated to be living in 1918. In other words, almost 86 per cent of those graduating within this period of 49 years are still living. This percentage does not take into account the number of these graduates who have become incapacitated for active duty.

The estimated total population in 1918 is 105,253,300. There is, therefore, one college graduate living to-day for every 116 persons in the total population. If only the population 23 years of age and

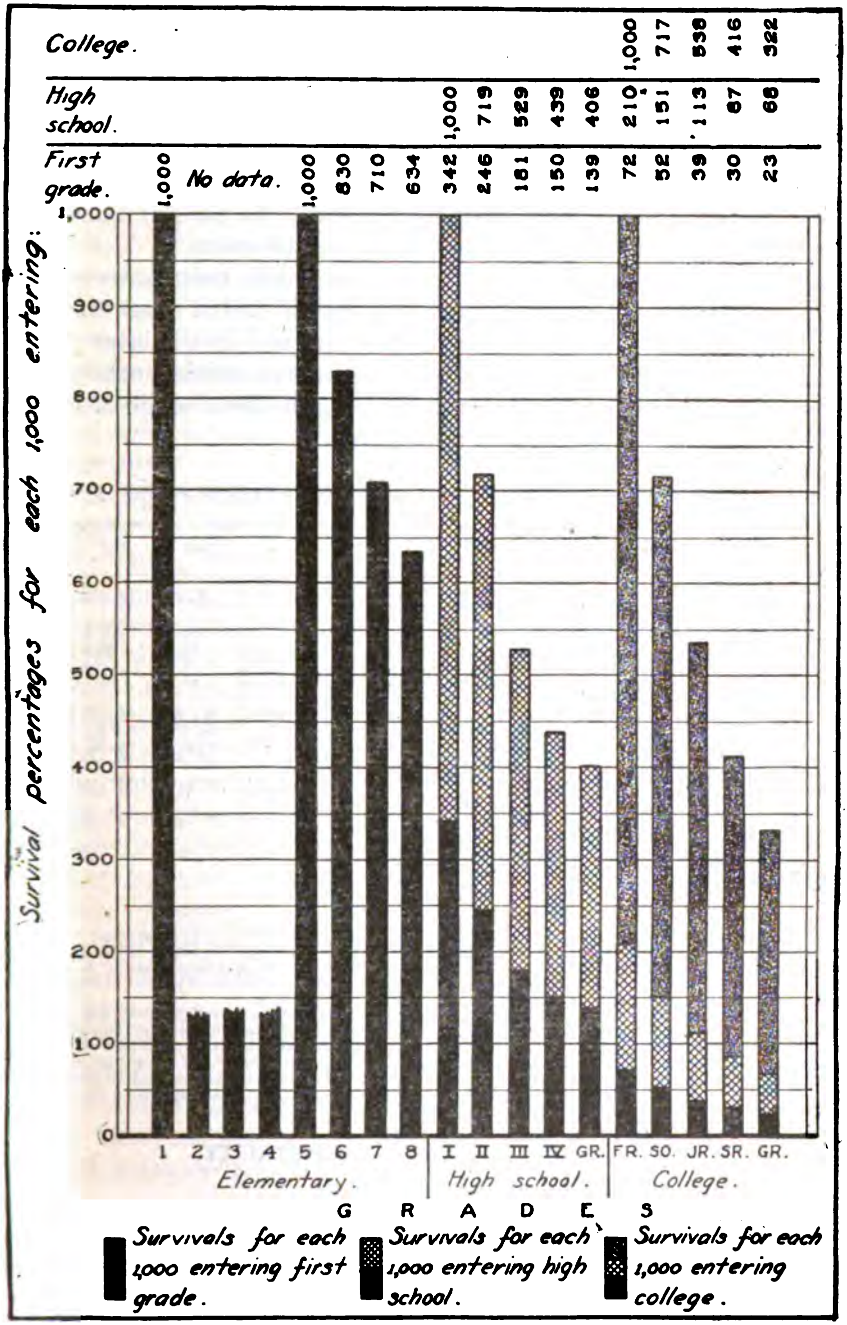

FIG. 11.—Number of pupils surviving to each grade of the elementary school, high school, and college for each 1,000 that begin. The bars, except the first, include retarded and accelerated pupils.

over is considered, the ratio becomes 1 college graduate to every 61 adults.

The death rates applied in securing the number of survivors have been taken from the United States life tables prepared by James W. Glover in 1910 for the Bureau of the Census. As college graduates should be better able than average citizens to guard and conserve their health and, therefore, to promote longevity, it is probable that the number of survivors is slightly too low. At present there is no known method of compensating for this minor error.

In computing the number of survivors it has been assumed that each class graduated at the age of 23. In the earlier years the usual age of graduation was a little over 23 years and in the later years a little under this age. Some, of course, graduate earlier; others later. These factors are practically compensating, if the average or median age of graduation has been chosen correctly.

TABLE 6.—*Method employed in ascertaining college and university survival percentages.*

Items.	1915	1916	1917	1918
Total collegiate enrollment	221,599	243,041	[1] 241,374	239,707
Per cent of collegiate students in [2]—				
Freshman year	39.3	39.3	39.2	39.2
Sophomore year	25.7	25.7	26.3	26.3
Junior year	19.3	19.3	19.4	19.4
Senior year	15.7	15.7	15.1	15.1
Number of collegiate students in—				
Freshman year	87,088	95,515	94,619	93,965
Sophomore year	56,951	62,462	63,481	63,043
Junior year	42,769	46,907	46,827	46,503
Senior year	34,791	38,157	36,447	36,196
Baccalaureate degrees granted				28,052
Survival percentage, class entering in 1915	1,000	717	538	416
College graduates, class entering in 1915				322
Survival percentage for each 1,000 entering first grade [3]	72	52	39	30
College graduates for each 1,000 entering first grade				23
Survival percentages for each 1,000 entering high school	210	151	113	87
College graduates for each 1,000 entering high school				68

[1] Estimated.

[2] These percentages are based on the returns from 313 colleges of liberal arts which reported their enrollment by classes for the autumns of 1916 and 1917 (see Higher Education Circular No. 9, April, 1918, Bureau of Education). It is assumed that the percentages for 1916 held for 1915 and that those for 1917 hold for 1918. The reduction in the percentage of students enrolled in the first and fourth year of college between 1916 and 1917 was undoubtedly due to the war.

[3] In the report on State school systems a series of survival percentages for elementary and secondary schools is shown. If the factor of retardation is omitted from consideration these percentages become: First grade, 1,000; second grade, no data; third grade, no data; fourth grade, no data: fifth grade, 1,000; sixth grade, 830; seventh grade, 710; eighth grade, 634; first year high school, 342; second year high school, 246; third year high school, 181; fourth year high school, 150; and high school graduates (four-year schools), 139. In the accompanying text it is shown that 51.7 per cent of those graduating from a four-year high school enter college, or 72 out of the original 1,000.

SCHOOL AND COLLEGE MORTALITY.

For public high schools it is estimated that 93.7 per cent of all graduates have completed a four-year course, while for private high schools it is estimated that the corresponding percentage is only 89.2. It is also found that 28.6 per cent of those graduating from a four-year public high school go to college, while 40.1 of the graduates from four-year private high schools go to college the year following graduation. In 1914 160,606 students graduated from public and 20,303 students from private high schools. Applying the percentages given above (93.7 and 89.2) to these totals, respectively, it is found that 150,488 students completed a four-year public high-school course and 18,110 students a four-year private high-school course in 1914, making a total of 168,598 students who were undoubtedly eligible to enter college in the fall of 1914. From public high-school statistics it is found that 28.6 per cent of the graduates of four-year schools will attend college the year following graduation. For private high schools the corresponding percentage is 40.1. Applying these percentages to the number of graduates given above, it is found that the public high schools send to college immediately 43,040 students, while the private high schools send an additional 7,262 students, making a total of 50,302 students. Theoretically at any rate high-school principals think that this number went to college immediately after graduation from high school in 1914.

The college returns show that the freshman class in collegiate work contained 87,088 students in 1914–15, which is 36,786, or 73 per cent, more than the high schools knew they had sent. This great discrepancy is probably due to two reasons: First, the high-school principal may not always know how many graduates go to college, as students may move from the community after graduation or a new principal may not be able to supply the data desired; second, students may not enter college immediately upon graduation from high school but at some later date. It is definitely known, however, that out of the 168,598 high-school graduates in 1914 an equivalent of 87,088 students were enrolled in the freshman classes at college the following fall. Some of these, of course, are repeating a part of the first-year collegiate work, but such students are relatively few in number and, therefore, are not deserving of consideration in this study. It is seen therefore that about 51.7 per cent of the graduates from four-year high schools go to college at some time.

This percentage is highly significant in that it forms a connecting link between the elementary and high school survival percentages on the one hand and those for colleges and universities on the other. In a footnote to Table 6 it is shown that 139 pupils will graduate from a four-year high school for each 1,000 that entered the first grade 12 years earlier. This transitional percentage (15.7 per cent) shows that 72 out of these 139 high-school graduates will go to college. Table 6 shows that 52 of these will become sophomores; 39, juniors; 30, seniors; and 23 will graduate. Thus it is seen that only 13.9 per cent of those entering the first grade will graduate from a four-year high school, and only 2.3 per cent of the original number will complete a college course.

Similar percentages have been ascertained for the number of survivals out of each 1,000 entering high school. On this basis it is found that 406 will graduate from high school, 210 will enter college, and 68 will complete a college course. Similarly it is found that for each 1,000 entering college 416 will become seniors and 322 will graduate. Since a large percentage of seniors in college left in 1918 to answer war demands, it is highly probable that under normal conditions a much larger percentage of seniors graduate than is here indicated, viz, only 77.4 per cent. This graph is especially significant since it shows the retentive power of our school system through the elementary, secondary, and higher grades. It should also be remembered that these college and university survival percentages do not represent special students or students enrolled in professional departments. Had it been possible to classify these students by years the survival percentages would have been considerably higher. All graduate students, in either graduate or professional departments, should not be included in this diagram, as they have previously passed beyond the limit represented in the graph. A decided drop occurs for the country as a whole between the eighth grade and first-year high school. As shown in the chapter on city school systems, this drop is not so pronounced in cities, where each child completing the elementary school work has an opportunity to attend high school. The loss between high school and college is also very pronounced, as best shown by the tops of the double-hatched bars in the diagram. Almost 30 per cent of the students enrolled in the first year of college do not enter the second year. The losses depicted from grade to grade in this diagram are sufficient to give concern to school administrators in all types of schools. There seems to be no measurable loss between the first grade and the fifth. Compulsory attendance laws are undoubtedly largely responsible for this condition.

LIBRARIES.

It is of interest to note the increasing size of college and university libraries, as outlined in figure 12. In 1890 the average size of the library was a little less than 7,000 volumes per institution. In 1918 the average number of volumes in the library had increased to almost 42,000. Within this period the increase was fivefold.

The average size of libraries is not so significant, however, as a distribution of institutions according to library facilities. This distribution is exhibited in figure 13. It will be observed that 258 institutions do not have so many as 10,000 volumes in their libraries. More than one-third of the libraries fall in this group. In the second group it is found that 142 libraries have from 10,000 to 19,999 volumes. By adding these two groups it is found that 400 libraries do not have so many as 20,000 volumes. Altogether, 517 college and university libraries, or almost 77 per cent of the total number of institutions, have smaller libraries than the average previously shown viz, 41,563. This asymmetrical distribution is caused by the fact that a few institutions have exceptionally large libraries. Thus 15 institutions have libraries with 210,000 volumes or over as follows: 223,470; 250,000; 253,000; 289,110; 298,856; 376,353; 410,573; 410,722; 451,000; 545,890; 557,931; 711,416; 1,100,000; and 1,241,500. The names of the institutions with these large libraries can be ascertained from the detailed tables. The largest library has about as many volumes as the 258 institutions having the smallest libraries. The total number of volumes in all libraries in 1918 was 23,025,736.

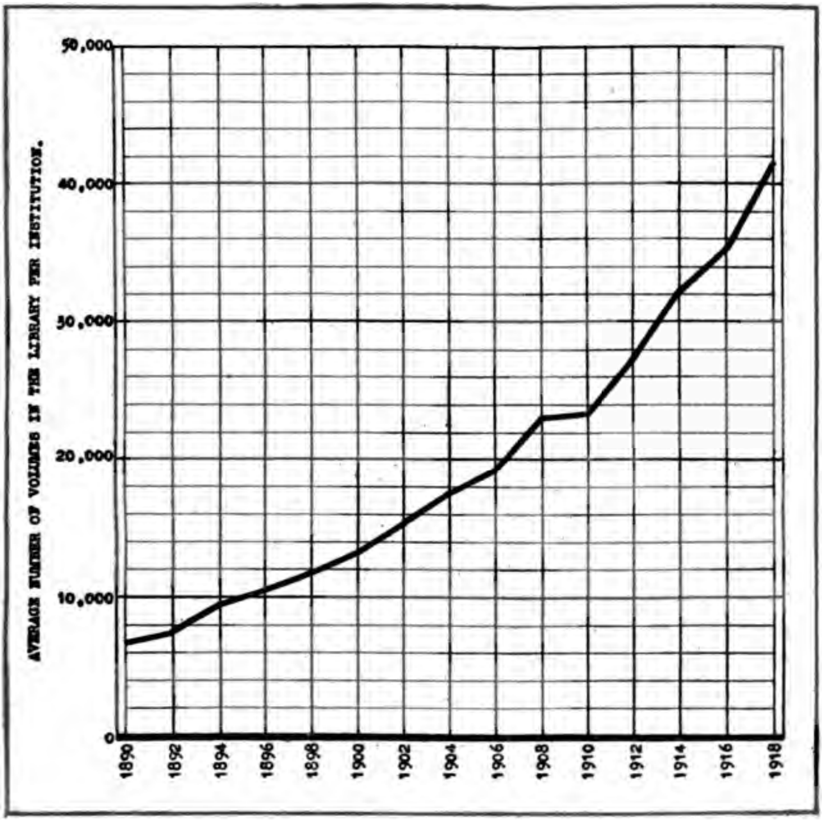

FIG. 12.—The average size of college and university libraries, 1890–1918.

ENDOWMENT.

A distribution of universities, colleges, and professional schools according to the total value of endowment funds is shown in figure 14. From this diagram it is seen that 214 institutions did not report the amount of endowment fund. The second bar represents 58 institutions having small endowment funds not exceeding $50,000. At the other end of the figure it will be observed that 90 institutions have endowment funds exceeding $1,000,000. In Table 1 the total value

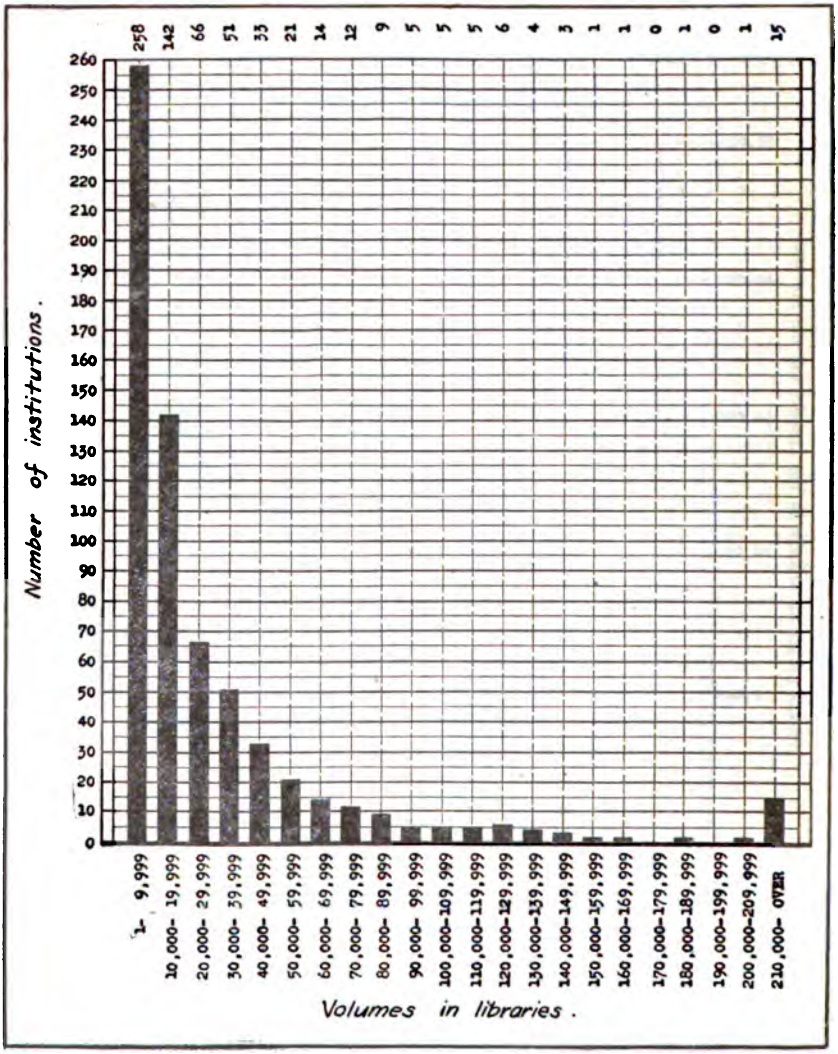

FIG. 13.—Distribution of 672 universities, colleges, and professional schools, according to the number of volumes in the library, 1917–18.

of endowment funds for each biennium since 1890 is shown. The amount of these productive funds in 1890 was only $76,680,076, while in 1918 it was $481,085,952. The increase in the amount of endowment funds has been more than quintupled within this 28-year period.

The amount of productive funds and the number of volumes in the libraries have increased at about the same rate.

A better measure as to the increase in endowment funds is found in the average value of such funds for each student enrolled. In 1890 this average was only $490 per student, while in 1918 it had increased to $1,282 per student. The increase per student has been only 162 per cent, or a little over 2½ times as much per capita as it was in 1890. It is doubtful if this per capita increase in endowment

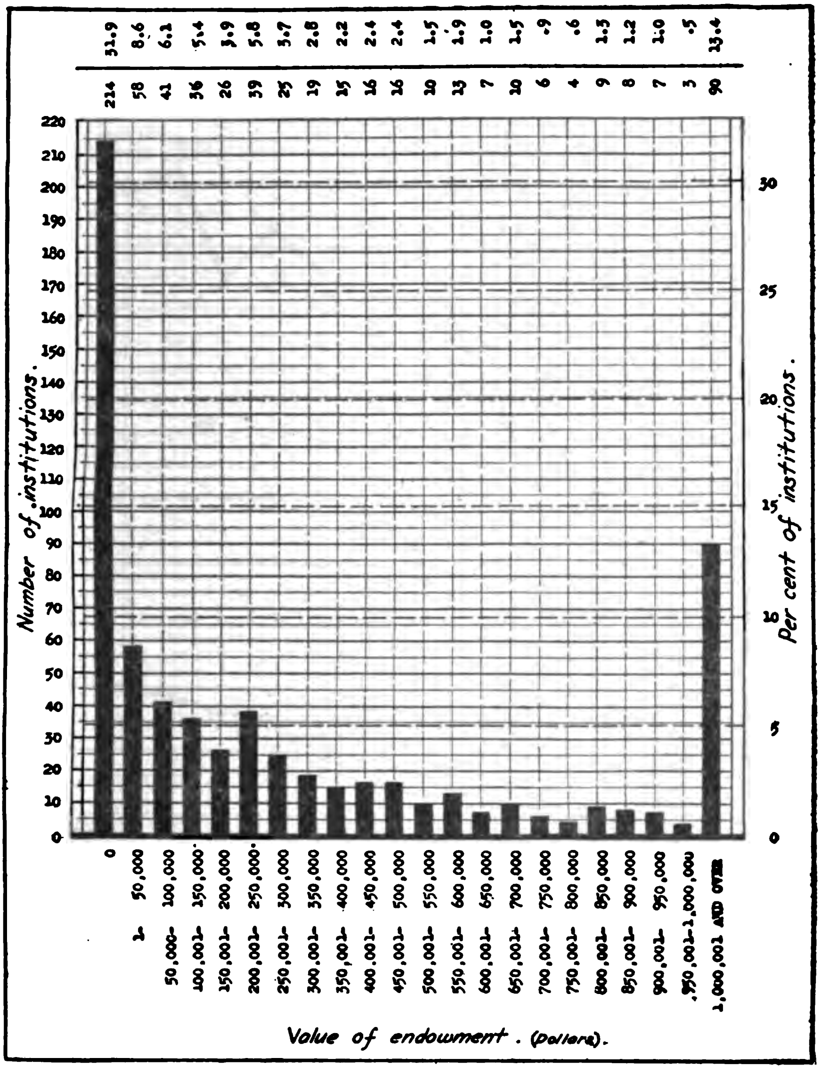

FIG. 14.—Distribution of universities, colleges, and professional schools according to the value of endowment funds, 1917-18.

has kept pace with the necessarily increasing cost of giving students a college education. This statement is further supported by the fact presented in figure 18 where it is shown that the percentage of income derived from this source has decreased almost steadily within the ast 28 years.

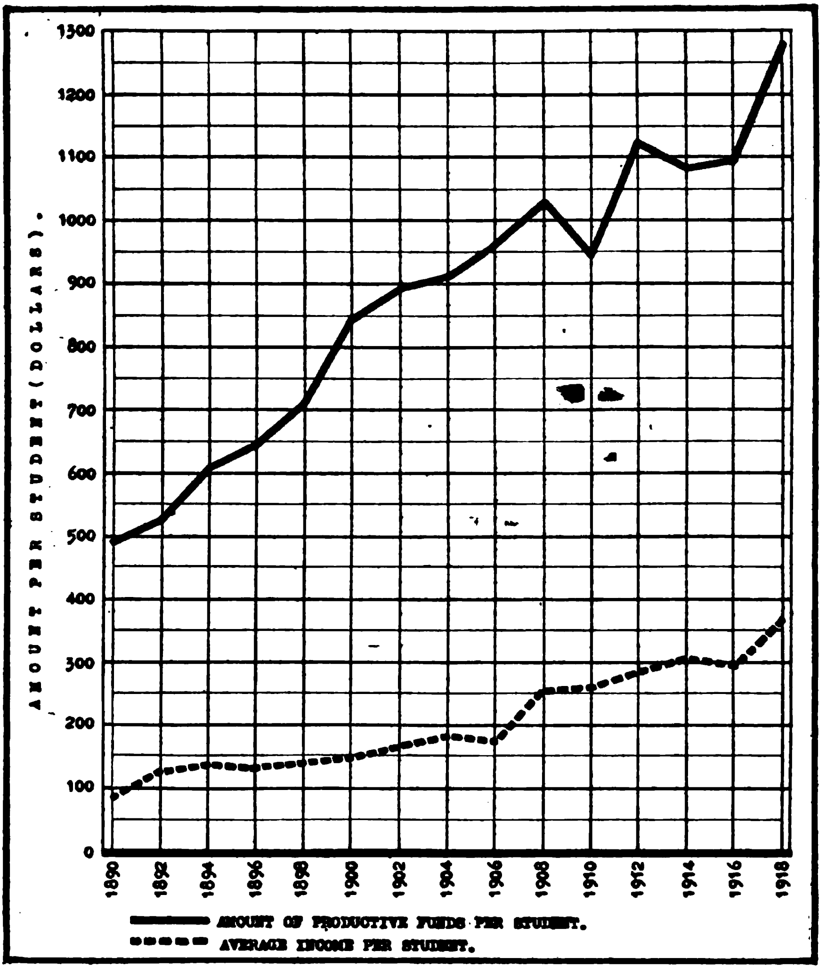

FIG. 15.—Income (excluding additions to endowment) and productive funds in universities, colleges, and technological schools, 1890–1918.

BENEFACTIONS.

The aggregate of gifts and bequests—excluding grants by the United States, different States, and municipalities—reported for the year 1917–18 was $27,829,142. Of this amount $5,577,096 was for increase of plant, $5,277,598 for current expenses, and $16,758,588 for endowment. Thirty-six universities, colleges, and professional schools reported gifts above $100,000 received during 1917–18, amounting to $19,582,483.

TABLE 7.—*Benefactions.*

States.	Institutions.	Amount.
California	University of California	$240,461
Do	Pacific Unitarian School for the Ministry	130,191
Do	University of Southern California	1,158,810
Colorado	Colorado College	373,569
Connecticut	Yale University	2,862,062
District of Columbia.	Catholic University of America	300,186
Georgia	Emory University	1,161,250
Illinois	University of Chicago	2,080,521
Do	Knox College	124,253
Indiana	Indiana Central University	270,000
Iowa	Dubuque College (Fourteenth Street)	1,000,000
Kansas	Baker University	155,339
Maine	Bowdoin College	118,438
Do	Bates College	264,332
Maryland	Goucher College	223,123
Massachusetts	Amherst College	942,057
Do	Massachusetts College of Pharmacy	183,777
Do	Harvard University	1,179,315
Do	Massachusetts Institute of Technology	550,000
Do	Williams College	491,357
Michigan	University of Michigan	292,718
Minnesota	Carleton College	160,964
Missouri	Park College	221,497
Do	Washington University	133,326
New Hampshire	Dartmouth College	105,256
New Jersey	Drew Theological Seminary	155,000
Do	Rutgers College	152,419
Do	Princeton University	278,838
New York	Cornell University	111,863
Do	Barnard College	262,212
Do	Bible Teachers Training School	139,713
Do	Columbia University	282,462
Do	Vassar College	253,683
Do	University of Rochester	180,330
Ohio	Ohio Wesleyan University	188,368
Do	Kenyon College	109,625
Do	Wilmington College	101,000
Oklahoma	Phillips University	111,180
Pennsylvania	Bryn Mawr College	114,335
Do	Lafayette College	158,426
Do	Haverford College	122,410
Do	University of Pennsylvania	1,093,989
Do	Swarthmore College	188,905
Tennessee	Vanderbilt University	454,518
Virginia	Union Theological Seminary	152,817
Wisconsin	Lawrence College	252,588
	Total	19,582,483

VALUE OF ALL PROPERTY.

The total value of all property owned by universities, colleges, and professional schools is shown for biennial dates in Table 1. These totals lack significance unless per capitas or average values are secured. Figure 16 shows the average value of all property per student (total enrollment) and the corresponding average per institution. In 1890 the average value of property per student was only $542, while in 1918 it had increased to $1,396. (The last average is unusually high, since the war reduced the student body slightly.) The increase per student has been, therefore, 158 per cent within this period. In other phraseology, the average value of property per student is now over two and one-half times what it was 28 years ago. The average value of property per institution increased from

$129,183 in 1890 to $945,530 in 1918. The increase in the importance of an institution as measured by property values has been 632 per cent within the last 28 years. The average college or university of to-day has property valued at about $1,000,000, exclusive of productive endowment funds.

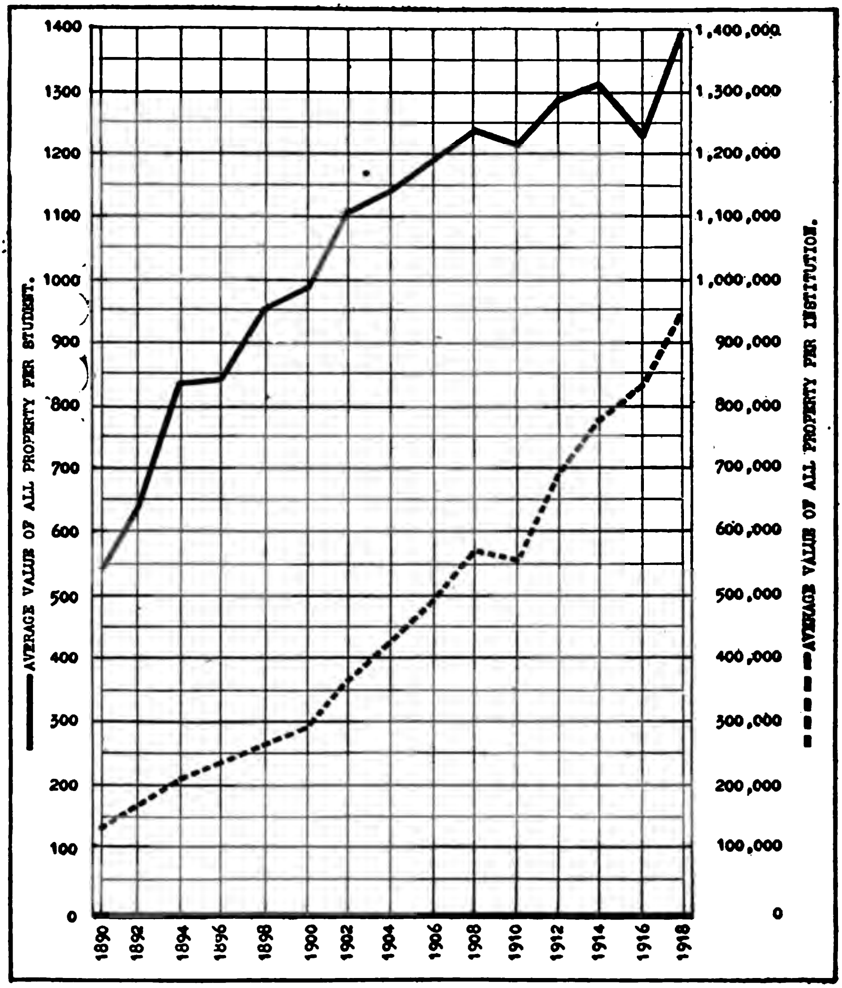

FIG. 16.—The average value of property in universities, colleges, and professional schools, 1917–18.

PROFESSIONAL SCHOOLS.

As shown in Table 15, in schools of theology, 8,574 men and 780 women were enrolled; 10,998 men and 822 women in schools of law; 13,160 men and 643 women in schools of medicine; 1,250 men, in veterinary medicine, 8,185 men and 129 women in schools of dentistry, and 3,597 men and 456 women in schools of pharmacy. These totals include all students in professional departments of colleges and universities and in independent professional schools. In 1916 the schools of theology enrolled 11,291 men and 760 women; schools of law, 22,306 men and 687 women; schools of medicine, 14,105 men and 662 women; schools of veterinary medicine, 3,064 men; schools of dentistry, 10,521 men and 194 women; and schools of pharmacy, 5,688 men and 346 women. Within this period of two years the number of students in schools of theology decreased by 2,797; in law schools, by 15,173; in medical schools, by 965; in schools of veterinary medicine, by 1,814; in schools of dentistry, by 2,041; and in schools of pharmacy, by 1,981. These enormous decreases were undoubtedly due to war conditions. The medical schools were least affected of any of the professional schools during this period. An order of the War Department permitted medical and dental students to complete their course and exempted them temporarily from the operation of the draft laws.

As shown in Table 21, schools of theology conferred 816 degrees on men and 12 on women; schools of law, 2,272 degrees on men and 97 on women; schools of medicine, 2,339 degrees on men and 84 on women; schools of veterinary medicine, 475 degrees on men; schools of dentistry, 2,601 degrees on men and 33 on women; and schools of pharmacy, 1,037 degrees on men and 13 on women. The number of degrees conferred by these professional schools is considerably less than the number conferred in 1916, as shown below, except in dentistry; in theology, 2,090; in law, 4,323; in medicine, 3,436; in veterinary medicine, 759; and in pharmacy, 1,796. In dentistry the number of degrees conferred in 1918 was greater than the number conferred in 1916, which was only 1,852. The total number of degrees conferred by these professional schools in 1916 was 14,256, while the corresponding number conferred in 1918 was only 9,863, or a decrease of almost 31 per cent.

TUITION FEES IN LAW, MEDICINE, AND DENTISTRY.

The annual tuition rates charged in schools of law, medicine, and dentistry are exhibited in figure 17. The most usual fee charged in schools of law is in the $100 group; while the most frequent ones charged for medical courses and courses in dentistry fall in the $150 group. One school charges $200 for a law course, a school of medicine charges $250, and a school of dentistry charges $210. The tuition fees charged in schools of law and schools of medicine are scattered over a wide range, while greater uniformity prevails among schools offering courses in dentistry.

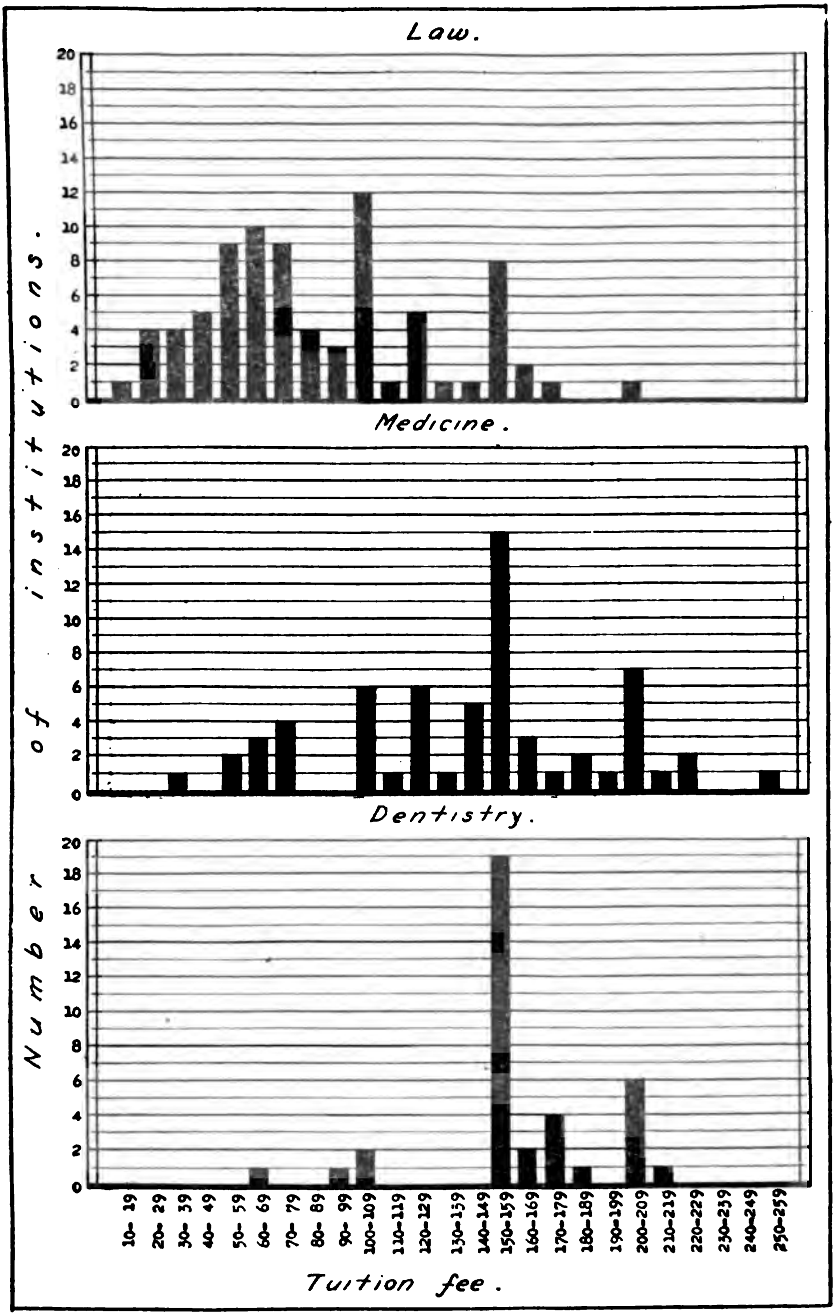

FIG. 17.—The annual tuition fees charged by professional schools for courses in law, medicine, and dentistry, 1917–18.

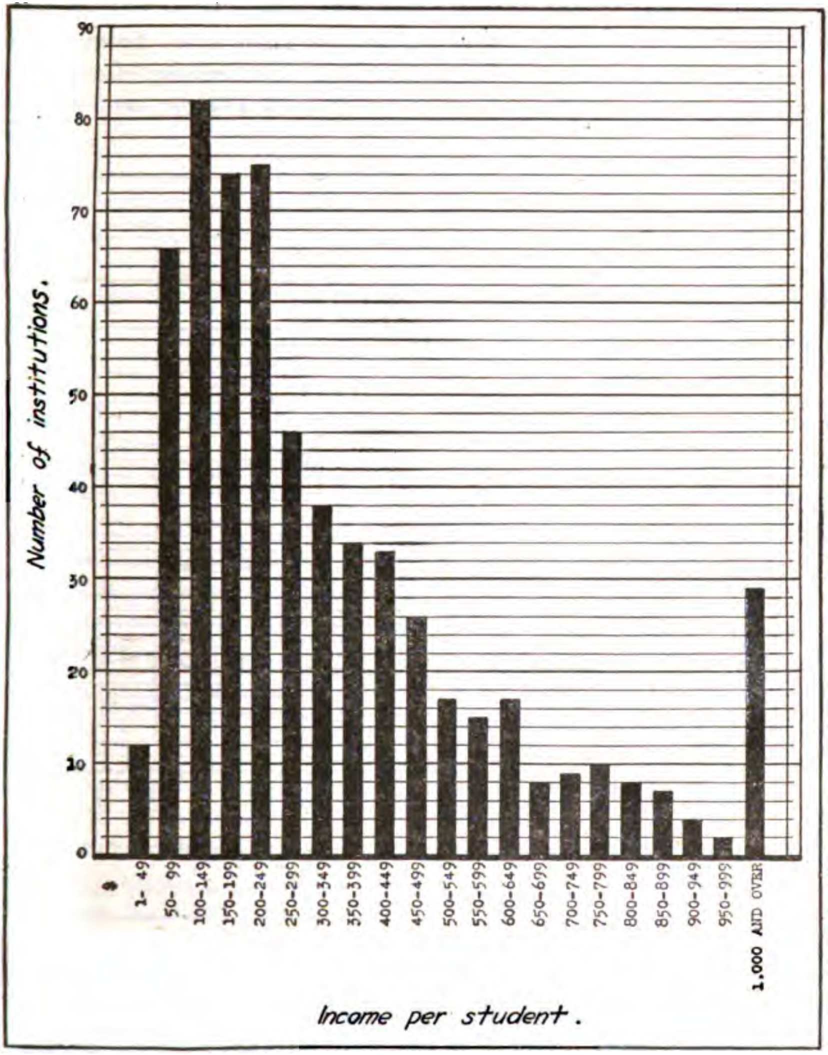

FIG. 13.—Distribution of 672 universities, colleges, and professional schools according to the income per student, exclusive of additions to endowment, 1917-18.

INCOME.

The total receipts of universities, colleges, and professional schools in 1918 was $153,801,555, including additions to endowments. The total "working" income, excluding additions to endowment, was $137,055,415. In 1892 the total income amounted to $27,894,163, while the "working" income aggregated $21,209,578. From these corresponding amounts it is found that the total income of colleges, universities, and professional schools increased 453 per cent within this 26-year period, while the "working" income increased 547 per cent within the same period. These increases are not so significant as the per capitas exhibited in figure 15. In that diagram it is found that the average working income per student in 1892 was only $68, while in 1918 it had increased to $365. This increase amounts to 437 per cent. In other words, it now costs over five times as much per year to provide education for a college student as it did 26 years ago. The rate of increase has been quite regular within this period and does not show any sudden increases except in 1918, which

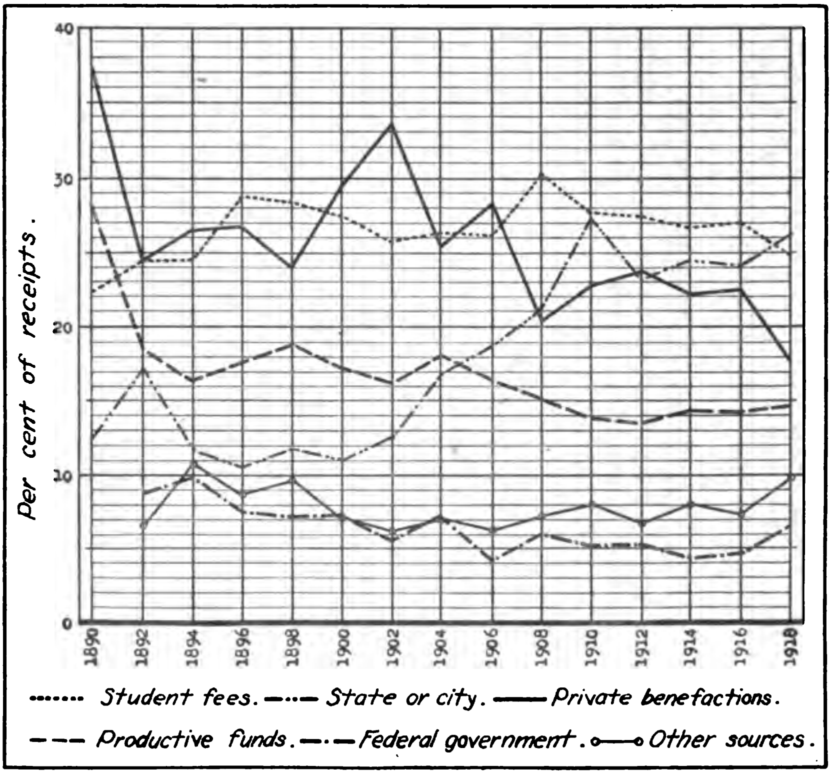

FIG. 19.—Per cent of income of universities, colleges, and technological schools derived from the various sources, 1890–1918.

is undoubtedly accounted for by an unexpected decrease in the student body due to war conditions. The statistics for income in 1890 seem to be unreliable, since all sources of income were not sought at that time in the statistical inquiry.

The average income per student indicates only a general trend, as all institutions do not have these averages. A clearer conception as to this variation among the different institutions is gained from figure 18. Here the universities, colleges, and professional schools have been distributed according to the average income per student. Only 12 institutions receive less than $50 per student; 66 receive from $50 to $99; 82 receive from $100 to $149, etc. More institutions fall in this $100–$149 group than in any other. The four longest bars, representing 297 institutions, show an average income per student ranging from $50 to $249. The average income of $365 is not typical of a very large number of schools. A few schools, 29 in number, have a "working" income of $1,000 or more for each student enrolled.

PER CENT OF INCOME FROM EACH SOURCE.

A careful analysis of figure 19 shows that considerable change has taken place since 1892 in the percentage of revenue of universities, colleges, and professional schools derived from the various sources. The percentage derived from student fees has remained practically constant, beginning and ending near the 25 per cent line. The proportion derived from productive funds has decreased from 18.5 per cent in 1892 to 14.6 per cent in 1918. The percentage derived from the State and city was lowest in 1896, when the percentage was only 10.6, and highest in 1918, when 27.2 per cent was derived from these sources. The percentage derived from private benefactions has shown considerable fluctuation, but in general has decreased within the period represented. While the amount of Federal aid to universities and colleges has increased in general, the proportion of revenue derived from this source has almost steadily decreased in comparison with the amount derived from other sources. The proportion received from incidental sources has remained practically constant. In general these higher institutions are coming more and more to depend upon the State or city for support and less on income from productive funds, private benefactions, and Federal support.

TABLE 8.—*Per cent of income of public and private universities, colleges, and professional schools derived from the various sources, 1917–18.*

States.	Public.				Private.			
	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.
1	2	3	4	5	6	7	8	9
United States	3.9	72.9	0.7	22.5	27.7	3.8	14.3	54.2
Alabama	19.8	60.9	.8	18.5	4.6		8.2	87.2
Arizona	3.3	82.3		14.4				
Arkansas	1.7	92.0		6.3	9.7		5.6	84.7
California	6.2	65.2	3.3	25.3	43.3		6.4	50.3
Colorado	2.1	79.7		18.2	30.2		3.7	66.1
Connecticut	1.5	57.3		41.2	37.4		45.2	17.4
Delaware	6.2	66.6	7.1	20.1				
Dist. Columbia	6.1	45.3	1.4	47.2	12.8		15.3	71.9
Florida	2.6	68.5	10.6	18.3	36.9		14.9	48.2
Georgia	3.8	74.4	.3	21.5	13.2		43.7	43.1
Idaho	17.9	77.0		5.1	23.7		56.4	19.9
Illinois	1.0	81.1	1.2	16.7	37.8		13.0	49.2
Indiana	3.9	70.9		25.2	27.4		6.7	65.9
Iowa	1.5	72.8		25.7	20.4		14.6	65.0
Kansas	1.5	73.2		25.3	15.4		16.6	68.0
Kentucky	1.4	58.2	.4	40.0	19.9		12.2	67.9
Louisiana	3.8	70.4		25.8	39.0		11.1	49.9
Maine	2.6	65.1		32.3	46.0		31.3	22.7
Maryland	.2	98.3		1.5	5.3	8.1	15.3	71.3
Massachusetts	1.5	72.6		25.9	32.1	2.4	12.2	53.3
Michigan	4.1	57.6	3.6	34.7	24.2		27.6	48.2
Minnesota	2.0	69.2		28.8	14.2		20.7	65.1
Mississippi	6.4	46.5	.3	46.8	7.0		6.3	86.7
Missouri	6.0	66.2		27.8	28.1		14.3	57.6
Montana	4.3	84.2		11.5				
Nebraska	3.3	75.0		21.7	34.6		19.6	45.8
Nevada	5.1	79.7		15.2				
New Hampshire	10.7	60.1		29.2	33.9	2.6	15.4	48.1
New Jersey					28.5	13.1	21.4	37.0
New Mexico	10.2	73.2		16.6				
New York		97.2		2.8	25.2	8.7	8.4	57.7
North Carolina	2.5	68.8	.6	28.1	22.1		7.8	70.1
North Dakota	17.4	58.5		24.1	8.3		34.6	57.1
Ohio	4.0	76.0	.7	19.3	29.7	.4	22.8	47.1
Oklahoma	10.1	82.0		7.9	16.6		28.9	54.5
Oregon	2.0	84.1		13.9	29.2		13.2	57.6
Pennsylvania	2.8	77.0		20.2	23.9	11.3	7.9	56.9
Rhode Island	1.2	64.3		34.5				
South Carolina	2.1	68.7		29.2	10.7		12.5	76.8
South Dakota	5.4	83.9		10.7	30.0		21.8	48.2
Tennessee	1.9	91.6	.3	6.2	25.1	1.5	16.4	57.0
Texas	7.2	62.6	.2	30.0	35.2		8.7	56.1
Utah		82.3		17.7				
Vermont	9.2	42.7		48.1	22.0	22.2	1.4	54.4
Virginia	9.6	39.6	1.1	49.7	16.7		12.7	70.6
Washington	5.7	72.3		22.0	22.0		.5	77.5
West Virginia	.9	87.8		11.3	19.1		2.6	78.3
Wisconsin	1.3	66.2	.8	31.7	26.1		11.7	62.2
Wyoming	6.9	74.9	.3	17.9				

In figures 20 and 21 the percentage of revenue of universities, colleges, and professional schools derived from the various sources is shown by States for public and private institutions.

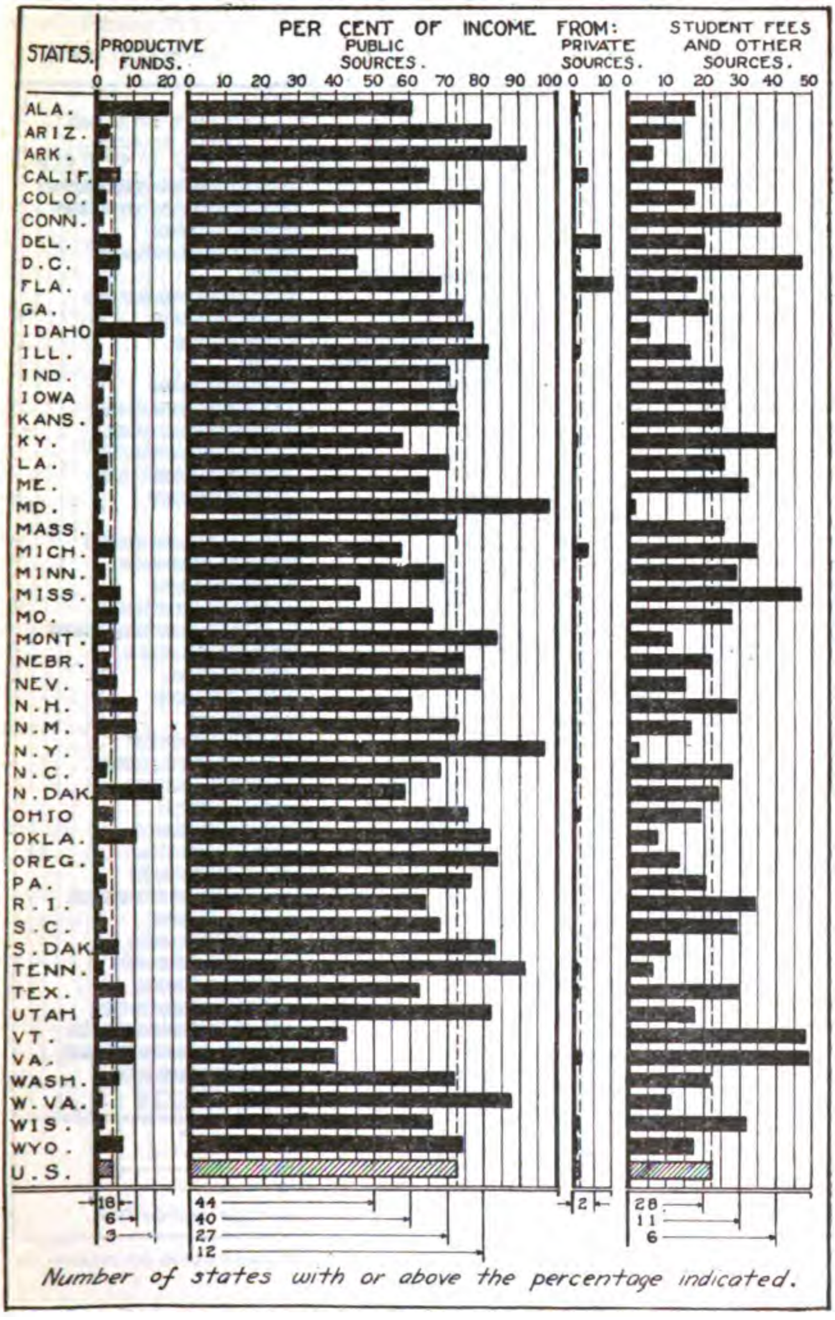

FIG. 20.—Per cent of income of public universities, colleges, and professional schools derived from the sources indicated 1917-18.

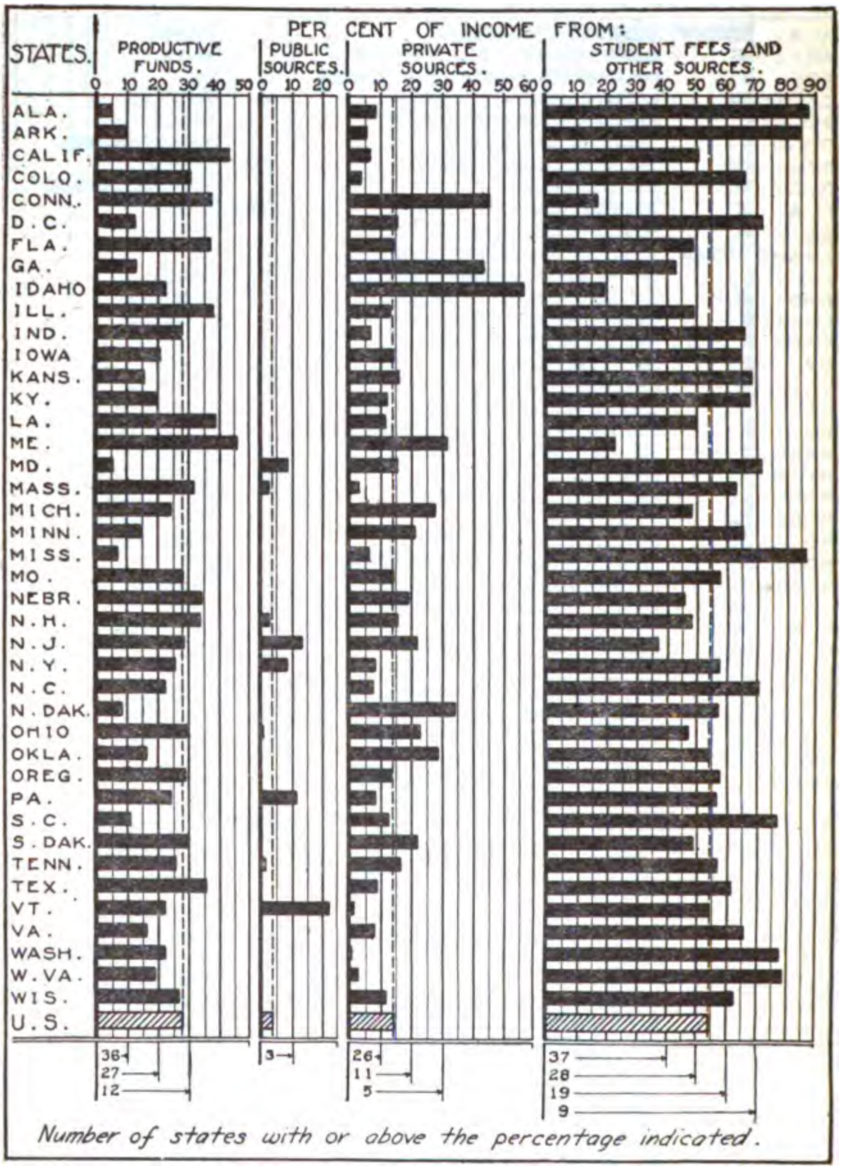

FIG. 21.—Per cent of income of private universities, colleges, and professional schools derived from the various sources indicated, 1917-18.

The public institutions as a general rule derive a very small proportion of their revenue from productive funds. Almost a negligible percentage is secured from private benefactions. The great bulk of the income of these institutions comes from public sources, and from student fees and other sources. Alabama, Idaho, and North Dakota are conspicuous because of the unusually high percentages of revenue derived from productive funds. Delaware and Florida derive comparatively high proportions of their income from private sources. The District of Columbia, Mississippi, Vermont, and Virginia get relatively small percentages of income from public sources. The public institutions in Arkansas, Maryland, and New York derive practically all their income from public sources.

The private institutions, except in Vermont, get very little revenue from public sources. The greatest proportion of revenue comes from student fees and other sources. A considerable proportion also comes from productive funds and private sources. Connecticut, Idaho, and Illinois are conspicuous for the large proportion of income derived from private sources. The private institutions in California, Connecticut, Florida, Illinois, Louisiana, Maine, and Texas receive relatively large percentages of revenue from productive funds. In Alabama, Arkansas, District of Columbia, Maryland, Mississippi, North Carolina, South Carolina, Washington, and West Virginia over 70 per cent of the income of these private schools is derived from student fees and other incidental sources.

SPECIAL COURSES.

Table 17 shows the number of students enrolled in the various special courses offered by universities, colleges, and professional schools. In short winter courses 12,096 students were enrolled, consisting of 8,429 men and 3,667 women. In extension courses 15,063 men and 17,817 women were registered, making a total of 32,880 students. In correspondence courses there were 2,879 men and 2,459 women, or a total of 5,338 students.

In the summer schools of these higher institutions in 1917 25,538 men and 52,521 women were enrolled. The number of women was more than double the number of men in these schools.

TABLE 9.—*Professors and instructors in universities, colleges, and professional schools in 1917–18.*

States.	Institutions.	Preparatory departments.		Collegiate departments.[1]		Professional departments.[2]		Other departments.		Total number (excluding duplicates.)	
		Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.
1	2	3	4	5	6	7	8	9	10	11	12
Continental United States.	672	1,804	1,223	18,358	4,960	9,955	228	591	956	29,509	7,013
Alabama	11	56	22	205	67	46	0	2	19	267	96
Arizona	1	0	0	48	12	4	0	0	0	52	12
Arkansas	9	10	16	78	38	67	0	6	17	160	71
California	22	24	5	831	153	458	15	40	40	1,348	198
Colorado	9	43	24	291	114	148	4	9	16	470	145
Connecticut	7	0	0	335	24	131	2	0	0	466	26
Delaware	1	0	0	41	9	0	0	0	0	41	9
Dist. Columbia	10	13	9	246	42	435	13	13	7	641	65
Florida	4	20	19	97	40	4	0	2	14	102	55
Georgia	18	44	35	270	106	146	0	17	38	441	171
Idaho	3	16	10	94	32	3	0	0	0	100	33
Illinois	47	122	134	1,292	333	996	28	35	72	2,231	531
Indiana	18	52	25	552	106	88	0	15	37	694	167
Iowa	23	99	68	624	292	127	5	59	60	847	308
Kansas	20	110	47	368	168	94	3	47	44	497	258
Kentucky	14	49	24	164	58	153	0	6	9	366	90
Louisiana	6	5	9	122	64	311	5	5	7	421	83
Maine	4	0	0	155	11	56	0	0	0	211	11
Maryland	18	82	22	445	81	269	15	2	8	790	126
Massachusetts	27	25	0	1,274	425	614	13	3	7	1,941	445
Michigan	16	35	7	678	80	387	1	11	7	1,006	93
Minnesota	18	141	37	450	102	253	4	20	26	850	169
Mississippi	10	10	39	106	108	11	0	24	33	151	160
Missouri	31	51	63	552	83	379	10	9	40	982	187
Montana	3	2	3	82	26	6	0	22	3	112	32
Nebraska	9	64	40	190	69	177	2	6	11	435	109
Nevada	1	0	0	38	10	0	0	0	0	38	10
New Hampshire	3	16	0	171	8	16	0	0	0	192	8
New Jersey	11	19	43	317	25	54	1	0	0	382	66
New Mexico	3	13	4	46	7	0	0	0	0	59	11
New York	47	133	82	2,498	668	1,682	31	16	4	4,329	785
North Carolina	19	30	65	271	80	53	0	6	28	348	166
North Dakota	4	50	26	109	34	17	0	2	9	144	59
Ohio	44	112	34	1,143	311	607	3	24	36	1,759	378
Oklahoma	6	12	9	163	74	94	5	3	15	273	97
Oregon	12	22	12	212	65	94	5	2	12	296	91
Pennsylvania	49	116	29	1,395	318	982	47	112	105	2,493	458
Rhode Island	2	0	0	84	10	0	0	0	0	84	10
South Carolina	16	13	9	211	57	6	0	2	23	226	82
South Dakota	7	20	36	106	43	7	0	10	10	136	76
Tennessee	18	41	63	241	77	334	2	11	48	613	174
Texas	17	24	38	391	163	98	9	15	40	515	236
Utah	2	13	5	95	30	25	0	0	0	133	35
Vermont	4	5	0	104	7	44	0	1	0	151	7
Virginia	28	27	69	330	109	190	1	12	61	552	217
Washington	4	23	4	222	53	43	0	2	5	300	62
West Virginia	4	7	14	86	23	14	0	3	5	110	42
Wisconsin	11	25	6	517	142	232	4	13	38	723	181
Wyoming	1	10	17	18	9	0	0	4	2	31	27
Outlying possessions.											
Hawaii	1			15	8					15	8
Porto Rico	1	25	8	16	2					28	8

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[1] Including engineering.

[2] Includes theology, law, medicine, veterinary medicine, dentistry, and pharmacy.

TABLE 10.—*Number of undergraduate and graduate students in public universities, colleges, and technological schools in 1917–18.*

States.	Institutions.	Collegiate departments.			Graduate departments.			Total number of undergraduate and graduate students.		
		Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
1	2	3	4	5	6	7	8	9	10	11
Continental United States	111	59,410	41,887	101,297	2,752	2,132	4,884	62,162	44,019	106,181
Alabama	3	1,109	512	1,621	12	0	12	1,121	512	1,633
Arizona	1	203	196	399	10	20	30	213	216	429
Arkansas	1	318	247	565	1	3	4	319	250	569
California	7	2,788	3,444	6,232	238	510	748	3,026	3,954	6,980
Colorado	4	1,176	2,300	3,476	69	66	135	1,245	2,366	3,611
Connecticut	1	112	25	137	0	0	0	112	25	137
Delaware	1	216	117	333	0	0	0	216	117	333
Dist. of Columbia	2	335	229	564	1	0	1	336	229	565
Florida	2	296	361	657	12	11	23	308	372	680
Georgia	3	1,487	12	1,499	14	6	20	1,501	18	1,519
Idaho	2	255	208	463	6	7	13	261	215	476
Illinois	2	2,806	1,385	4,191	298	77	375	3,104	1,462	4,566
Indiana	2	2,151	1,675	3,826	116	89	205	2,267	1,764	4,031
Iowa	3	2,593	2,612	5,205	322	260	582	2,915	2,872	5,787
Kansas	3	1,856	1,465	3,321	67	56	123	1,923	1,521	3,444
Kentucky	2	533	407	940	19	23	42	552	430	982
Louisiana	1	509	200	709	19	9	28	528	209	737
Maine	1	611	223	834	4	5	9	615	228	843
Maryland	2	1,537	3	1,540	10	0	10	1,547	3	1,550
Massachusetts	1	388	24	412	28	1	29	416	25	441
Michigan	5	4,536	1,834	6,370	192	82	274	4,728	1,916	6,644
Minnesota	3	1,877	1,852	3,729	221	106	327	2,098	1,958	4,056
Mississippi	3	865	759	1,624	3	0	3	868	759	1,627
Missouri	2	2,209	1,529	3,738	117	73	190	2,326	1,602	3,928
Montana	3	478	573	1,051	6	9	15	484	582	1,066
Nebraska	1	1,424	1,780	3,204	127	175	302	1,551	1,955	3,506
Nevada	1	151	162	313	3	8	11	154	170	324
New Hampshire	1	395	159	554	0	0	0	395	159	554
New Jersey	0	0	0	0	0	0	0	0	0	0
New Mexico	3	137	115	252	1	0	1	138	115	253
New York	5	4,176	2,740	6,916	5	5	10	4,181	2,745	6,926
North Carolina	2	1,118	11	1,129	37	4	41	1,155	15	1,170
North Dakota	2	451	529	980	14	7	21	465	536	1,001
Ohio	6	4,749	4,447	9,196	164	163	327	4,913	4,610	9,523
Oklahoma	3	1,159	920	2,079	29	21	50	1,188	941	2,129
Oregon	2	1,283	1,189	2,472	22	10	32	1,305	1,199	2,504
Pennsylvania	1	1,743	257	2,000	40	3	43	1,783	260	2,043
Rhode Island	1	194	47	241	0	2	2	194	49	243
South Carolina	4	1,404	27	1,431	28	11	39	1,432	38	1,470
South Dakota	3	440	436	876	7	4	11	447	440	887
Tennessee	1	407	247	654	7	3	10	414	250	664
Texas	3	1,737	1,800	3,537	38	27	65	1,775	1,827	3,602
Utah	2	650	780	1,430	36	4	40	686	784	1,470
Vermont	1	295	179	474	2	2	4	297	181	478
Virginia	4	1,980	3	1,983	24	0	24	2,004	3	2,007
Washington	2	1,655	1,888	3,543	134	130	264	1,789	2,018	3,807
West Virginia	1	542	229	771	19	15	34	561	244	805
Wisconsin	1	1,998	1,636	3,634	228	125	353	2,226	1,761	3,987
Wyoming	1	78	114	192	2	0	2	80	114	194
Outlying possessions:										
Hawaii	1	45	14	59	0	2	2	45	16	61
Porto Rico	1	24	49	73	0	0	0	24	49	73

TABLE 11.—*Number of undergraduate and graduate students in private universities, colleges, and technological schools in 1917–18.*

States.	Institutions.	Collegiate departments.			Graduate departments.			Total number of undergraduate and graduate students.		
		Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
1	2	3	4	5	6	7	8	9	10	11
Continental United States	443	74,861	63,549	138,410	5,575	3,757	9,332	80,436	67,306	147,742
Alabama	8	462	408	870	0	4	4	462	412	874
Arizona	0	0	0	0	0	0	0	0	0	0
Arkansas	6	347	356	703	0	0	0	347	356	703
California	11	2,507	2,512	5,019	211	288	499	2,718	2,800	5,518
Colorado	4	407	703	1,110	49	49	98	456	752	1,208
Connecticut	4	1,973	240	2,213	253	30	283	2,226	270	2,496
Delaware	0	0	0	0	0	0	0	0	0	0
Dist. Columbia	6	1,328	1,227	2,555	238	65	303	1,566	1,292	2,858
Florida	2	100	152	252	12	11	23	112	163	275
Georgia	14	818	1,406	2,224	0	4	4	818	1,410	2,228
Idaho	1	38	96	134	0	0	0	38	96	134
Illinois	30	6,176	7,844	14,020	1,595	1,126	2,721	7,771	8,970	16,741
Indiana	12	1,730	1,524	3,254	18	13	31	1,748	1,537	3,285
Iowa	19	2,039	2,589	4,628	11	16	27	2,050	2,606	4,655
Kansas	16	1,051	1,435	2,486	3	1	4	1,054	1,436	2,490
Kentucky	9	616	413	1,029	20	2	22	636	415	1,051
Louisiana	5	798	487	1,285	8	5	13	806	492	1,298
Maine	3	853	367	1,220	0	0	0	853	367	1,220
Maryland	12	1,489	1,447	2,936	111	52	163	1,600	1,499	3,099
Massachusetts	18	7,316	7,105	14,421	502	197	699	7,818	7,302	15,120
Michigan	8	891	748	1,639	0	2	2	891	750	1,641
Minnesota	10	1,037	1,338	2,375	0	0	0	1,037	1,338	2,375
Mississippi	7	363	467	830	0	1	1	363	468	831
Missouri	18	2,368	1,509	3,877	49	20	69	2,417	1,529	3,946
Montana	0	0	0	0	0	0	0	0	0	0
Nebraska	7	543	666	1,209	2	4	6	545	670	1,215
Nevada	0	0	0	0	0	0	0	0	0	0
New Hampshire	2	1,093	0	1,093	1	0	1	1,094	0	1,094
New Jersey	6	1,947	181	2,128	83	1	84	2,030	182	2,212
New Mexico	0	0	0	0	0	0	0	0	0	0
New York	30	13,162	8,294	21,456	1,509	1,366	2,875	14,671	9,660	24,331
North Carolina	17	1,455	1,085	2,540	3	6	9	1,458	1,091	2,549
North Dakota	2	70	123	193	0	0	0	70	123	193
Ohio	28	3,787	3,437	7,224	23	17	40	3,810	3,454	7,264
Oklahoma	3	143	231	374	7	[illegible]	12	150	236	386
Oregon	7	272	373	645	4	4	8	276	377	653
Pennsylvania	37	10,816	6,455	17,271	680	375	1,055	11,496	6,830	18,326
Rhode Island	1	594	212	806	34	22	56	628	234	862
South Carolina	11	833	1,195	2,028	2	6	8	835	1,201	2,036
South Dakota	4	181	199	380	1	0	1	182	199	381
Tennessee	16	1,196	1,864	3,060	124	49	173	1,320	1,913	3,233
Texas	12	1,662	1,960	3,622	15	6	21	1,677	1,966	3,643
Utah	0	0	0	0	0	0	0	0	0	0
Vermont	3	336	151	487	0	1	1	336	152	488
Virginia	20	935	1,441	2,376	2	6	8	937	1,447	2,384
Washington	2	109	144	253	5	2	7	114	146	260
West Virginia	3	125	156	281	0	0	0	125	156	281
Wisconsin	9	895	1,009	1,904	0	1	1	895	1,010	1,905
Wyoming	0	0	0	0	0	0	0	0	0	0

TABLE 12.—*Distribution of preparatory, professional, and special students in public and private colleges, universities, and professional schools in 1917–18.*

States.	Preparatory students.						Professional students (theology, law, medicine, dentistry, pharmacy, veterinary medicine).						All other students (includes students in music, art, oratory, business, etc., unless these are enrolled in 4-year courses leading to a degree).					
	Public.			Private.			Public.			Private.			Public.			Private.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Continental United States	5,225	4,875	10,100	22,932	11,628	34,560	9,213	558	9,771	36,550	2,272	38,822	2,587	3,278	5,865	8,738	21,580	30,318
Alabama	0	125	125	945	228	1,173	183	3	186	15	0	15	53	5	58	120	121	241
Arizona	0	0	0	0	0	0	11	0	11	0	0	0	8	27	35	0	0	0
Arkansas	34	42	76	181	129	310	52	0	52	27	5	32	17	16	33	57	167	224
California	0	0	0	326	125	451	539	53	592	1,027	119	1,146	8	56	64	188	640	828
Colorado	381	482	863	236	47	283	125	16	141	285	16	301	93	664	757	191	175	366
Connecticut	49	0	49	0	6	6	0	0	0	283	10	293	0	0	0	53	100	153
Delaware	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0
Dist. Columbia	231	84	315	0	0	0	412	13	425	1,823	126	1,949	186	123	309	0	0	0
Florida	0	51	51	99	130	229	46	0	46	0	0	0	0	73	73	42	133	175
Georgia	222	13	235	661	612	1,273	94	0	94	483	16	499	130	0	130	67	909	976
Idaho	112	61	173	13	11	24	25	0	25	0	0	0	5	51	56	12	70	82
Illinois	0	0	0	1,740	1,358	3,098	595	34	629	4,498	262	4,760	0	0	0	720	2,466	3,186
Indiana	0	0	0	640	229	869	288	9	297	566	2	568	10	13	23	182	351	533
Iowa	430	526	956	860	393	1,253	731	22	753	196	11	207	66	167	233	641	2,138	2,779
Kansas	178	137	315	828	289	1,117	350	38	388	120	5	125	212	310	522	351	1,250	1,601
Kentucky	0	0	0	736	538	1,274	53	2	55	517	95	612	20	20	40	263	313	576
Louisiana	23	47	70	60	105	165	29	2	31	771	31	802	0	0	0	102	143	245
Maine	0	0	0	0	0	0	34	0	34	44	0	44	0	0	0	20	9	29
Maryland	13	1	14	769	199	968	0	0	0	1,110	59	1,169	12	1	13	91	182	273
Massachusetts	0	0	0	1,255	0	1,255	0	0	0	3,129	192	3,321	54	8	62	742	528	1,270
Michigan	0	0	0	421	35	456	988	54	1,042	481	26	507	0	0	0	196	360	556
Minnesota	813	355	1,168	991	31	1,022	820	37	857	577	0	577	0	0	0	248	361	609
Mississippi	0	0	0	115	350	465	111	2	113	10	1	11	128	244	372	39	621	660
Missouri	0	0	0	826	625	1,451	124	22	146	2,605	105	2,710	0	0	0	614	764	1,378
Montana	6	6	12	0	0	0	37	15	52	0	0	0	184	80	264	0	0	0

TABLE 12.—*Distribution of preparatory, professional, and special students in public and private colleges, universities, and professional schools in 1917–18*—Continued.

States.	Preparatory students.						Professional students (theology, law, medicine, dentistry, pharmacy, veterinary medicine).						All other students (including students in music, art, oratory, business, etc., unless these are enrolled in 4-year courses leading to a degree).					
	Public.			Private.			Public.			Private.			Public.			Private.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Nebraska	67	188	255	474	180	654	420	20	440	371	0	371	121	256	377	256	762	1,018
Nevada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Hampshire	0	0	0	107	0	107	0	0	0	43	0	43	4	4	8	0	0	0
New Jersey	0	0	0	103	263	366	0	0	0	506	19	525	0	0	0	22	17	39
New Mexico	127	52	179	0	0	0	0	0	0	0	0	0	27	35	62	0	0	0
New York	1,709	1,929	3,638	1,111	120	1,231	0	0	0	8,065	528	8,593	29	77	106	488	710	1,198
North Carolina	0	0	0	508	697	1,205	136	4	140	193	3	196	103	5	108	58	435	493
North Dakota	258	117	375	34	37	71	87	7	94	0	0	0	26	28	54	154	428	582
Ohio	0	0	0	1,688	516	2,204	693	38	731	1,631	79	1,710	142	162	304	588	1,779	2,367
Oklahoma	283	302	585	164	149	313	200	12	212	86	26	112	21	26	47	130	254	384
Oregon	44	27	71	82	89	171	108	28	136	434	92	526	339	159	498	102	335	437
Pennsylvania	0	0	0	4,080	899	4,979	0	0	0	4,148	216	4,364	137	12	149	1,226	2,087	3,313
Rhode Island	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	15	75
South Carolina	0	0	0	187	184	371	40	3	43	20	0	20	66	23	89	0	304	304
South Dakota	40	29	69	312	222	534	103	8	111	0	0	0	30	65	95	210	660	870
Tennessee	0	0	0	433	746	1,179	175	4	179	811	38	849	0	0	0	190	449	639
Texas	0	116	116	608	745	1,353	392	33	425	662	178	840	0	245	245	94	605	699
Utah	33	32	65	0	0	0	195	1	196	0	0	0	229	110	339	0	0	0
Vermont	0	0	0	70	0	70	105	0	105	11	0	11	2	6	8	12	0	12
Virginia	9	0	9	442	1,097	1,539	477	3	480	323	0	323	89	0	89	58	619	677
Washington	127	121	248	340	0	340	132	50	182	31	0	31	2	1	3	12	5	17
West Virginia	0	0	0	153	154	307	79	6	85	0	0	0	13	83	96	69	89	158
Wisconsin	0	0	0	334	90	424	224	19	243	648	12	660	2	54	56	130	226	356
Wyoming	36	32	68	0	0	0	0	0	0	0	0	0	19	66	85	0	0	0

TABLE 13.—*Students in universities, colleges, and professional schools in 1917–18.*

States.	Preparatory departments.		Collegiate departments.[1]		Graduate departments.		Professional departments.[2]		All other students.[3]		Total number (excluding duplicates).	
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.
1	2	3	4	5	6	7	8	9	10	11	12	13
Continental United States.	28,157	16,503	134,271	105,436	8,497	5,909	45,763	2,830	11,385	24,848	223,841	151,518
Alabama	945	353	1,571	920	12	4	198	3	173	126	2,899	1,402
Arizona	0	0	203	196	10	20	11	0	8	27	232	243
Arkansas	215	171	665	603	1	3	79	5	74	183	977	946
California	326	125	5,295	5,956	449	798	1,566	172	196	686	7,734	7,737
Colorado	617	529	1,583	3,003	118	115	410	32	284	839	2,862	3,810
Connecticut	49	6	2,085	265	253	30	283	10	53	100	2,722	409
Delaware	0	0	216	117	0	0	0	0	0	3	216	120
Dist. Columbia	231	84	1,663	1,456	239	65	2,235	139	186	123	4,364	1,866
Florida	99	181	396	513	17	12	46	0	42	206	600	912
Georgia	883	625	2,305	1,418	14	10	577	16	197	909	3,976	2,574
Idaho	125	72	293	304	6	7	25	0	17	121	450	415
Illinois	1,740	1,358	8,982	9,229	2,063	1,223	5,093	296	720	2,466	17,720	13,972
Indiana	640	229	3,881	3,199	134	102	854	11	192	363	5,665	3,905
Iowa	1,290	919	4,632	5,201	333	276	927	33	707	2,305	7,504	8,595
Kansas	1,006	426	2,907	2,900	70	57	470	43	563	1,560	4,753	4,825
Kentucky	736	538	1,149	820	39	25	570	97	283	333	2,772	1,804
Louisiana	83	152	1,307	687	27	24	800	33	102	143	2,319	995
Maine	0	0	1,464	590	4	5	78	0	20	9	1,560	604
Maryland	782	200	3,026	1,450	121	52	1,110	59	103	183	5,089	1,916
Massachusetts	1,255	0	7,704	7,129	523	198	3,129	192	796	536	13,407	8,055
Michigan	421	35	5,427	2,582	192	84	1,469	80	196	360	8,033	3,353
Minnesota	1,804	386	2,914	3,190	221	106	1,397	37	248	361	6,542	4,018
Mississippi	115	350	1,228	1,226	3	1	121	3	167	865	1,624	2,327
Missouri	826	625	4,577	3,038	166	93	2,729	127	614	764	8,318	4,537
Montana	6	6	478	573	6	9	37	15	184	80	711	683
Nebraska	541	368	1,967	2,446	129	179	791	20	377	1,018	3,731	3,407
Nevada	0	0	151	162	3	8	0	0	0	0	154	170
New Hampshire	107	0	1,488	159	1	0	43	0	4	4	1,612	163
New Jersey	103	263	1,947	181	83	1	506	19	22	17	2,661	481
New Mexico	127	52	137	115	1	0	0	0	27	35	272	202
New York	2,820	2,049	17,338	11,034	1,514	1,371	8,065	528	517	787	29,631	15,495
North Carolina	508	697	2,573	1,096	40	10	329	7	161	440	3,420	2,240
North Dakota	292	154	521	652	14	7	87	7	180	456	1,086	1,208
Ohio	1,688	516	8,536	7,884	187	180	2,324	117	730	1,941	12,948	10,364
Oklahoma	447	451	1,302	1,151	36	26	286	38	151	280	2,217	1,905
Oregon	126	116	1,555	1,562	26	14	542	120	441	494	2,627	2,208
Pennsylvania	4,080	899	12,559	6,712	734	378	4,148	216	1,363	2,099	22,853	10,174
Rhode Island	0	0	788	259	34	24	0	0	60	15	882	298
South Carolina	187	184	2,237	1,222	30	17	60	3	66	327	2,580	1,753
South Dakota	352	251	621	635	8	4	103	8	240	725	1,202	1,533
Tennessee	433	746	1,603	2,111	131	52	986	42	190	449	3,229	3,244
Texas	608	861	3,399	3,760	53	33	1,054	211	94	850	5,196	5,717
Utah	33	32	650	780	36	4	195	1	229	110	1,143	846
Vermont	70	0	631	330	2	3	116	0	14	6	817	339
Virginia	451	1,097	2,915	1,444	26	6	800	3	147	619	4,356	3,029
Washington	467	121	1,764	2,032	139	132	163	50	14	6	2,547	2,341
West Virginia	153	154	667	385	19	15	79	6	82	172	1,000	732
Wisconsin	334	90	2,893	2,645	228	126	872	31	132	280	4,493	3,434
Wyoming	36	32	78	114	2	0	0	0	19	66	135	212
Outlying possessions:												
Hawaii	0	0	45	14	0	2	0	0	20	59	65	75
Porto Rico	114	3	24	49	0	0	0	0	68	224	206	257

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[1] Includes also engineering students.

[2] Includes students in theology, law, medicine, veterinary medicine, dentistry, and pharmacy.

[3] Includes students in music, art, oratory, business, etc., unless they are enrolled in four-year courses leading to a collegiate degree.

TABLE 14.—*Undergraduate students in universities, colleges, and technological schools in 1917–18.*

States.	Institutions.	Colleges for men.		Colleges for women.		Colleges for both sexes.			
		Institutions.	Undergraduate students.	Institutions.	Undergraduate students.	Institutions.	Undergraduate students.		
							Men.	Women.	Total.
1	2	3	4	5	6	7	8	9	10
Continental United States	554	124	36,872	100	25,495	330	97,399	79,941	177,340
Alabama	11	3	136	3	695	5	1,435	225	1,660
Arizona	1	0	0	0	0	1	203	196	399
Arkansas	7	0	0	2	121	5	665	482	1,147
California	18	4	433	1	254	13	4,862	5,702	10,564
Colorado	8	1	16	1	48	6	1,567	2,955	4,522
Connecticut	5	3	1,973	1	240	1	112	25	137
Delaware	1	0	0	0	0	1	216	117	333
Dist. Columbia	8	2	308	2	482	4	1,355	974	2,329
Florida	4	1	296	1	361	2	100	152	252
Georgia	17	7	2,161	7	1,319	3	144	99	243
Idaho	3	0	0	0	0	3	293	304	597
Illinois	32	3	704	4	539	25	8,278	8,690	16,968
Indiana	14	3	871	1	103	10	3,010	3,096	6,106
Iowa	22	3	297	1	103	18	4,335	5,098	9,433
Kansas	19	2	60	0	0	17	2,847	2,900	5,747
Kentucky	11	4	231	1	50	6	918	770	1,688
Louisiana	6	2	658	2	457	2	649	230	879
Maine	4	1	374	0	0	3	1,090	590	1,680
Maryland	14	5	1,744	3	984	6	1,282	466	1,748
Massachusetts	19	7	4,268	6	6,231	6	3,436	898	4,334
Michigan	13	2	212	0	0	11	5,215	2,582	7,797
Minnesota	13	3	228	2	379	8	2,686	2,811	5,497
Mississippi	10	0	0	5	962	5	1,228	264	1,492
Missouri	20	3	1,078	7	495	10	3,499	2,543	6,042
Montana	3	0	0	0	0	3	478	573	1,051
Nebraska	8	1	159	0	0	7	1,808	2,446	4,254
Nevada	1	0	0	0	0	1	151	162	313
New Hampshire	3	2	1,093	0	0	1	395	159	554
New Jersey	6	4	1,930	1	175	1	17	6	23
New Mexico	3	0	0	0	0	3	137	115	252
New York	35	15	7,682	9	4,822	11	9,656	6,212	15,868
North Carolina	19	5	1,325	7	740	7	1,248	356	1,604
North Dakota	4	0	0	0	0	4	521	652	1,173
Ohio	34	6	835	3	578	25	7,701	7,306	15,007
Oklahoma	6	0	0	1	121	5	1,302	1,030	2,332
Oregon	9	0	0	0	0	9	1,555	1,562	3,117
Pennsylvania	38	11	2,279	7	962	20	10,280	5,750	16,030
Rhode Island	2	0	0	0	0	2	788	259	1,047
South Carolina	15	5	1,634	5	1,093	5	603	129	732
South Dakota	7	0	0	0	0	7	621	635	1,256
Tennessee	17	2	206	3	144	12	1,397	1,967	3,364
Texas	15	2	885	3	1,405	10	2,514	2,355	4,869
Utah	2	0	0	0	0	2	650	780	1,430
Vermont	4	2	201	0	0	2	430	330	760
Virginia	24	8	2,378	9	1,265	7	537	179	716
Washington	4	1	28	0	0	3	1,736	2,032	3,768
West Virginia	4	0	0	0	0	4	667	385	1,052
Wisconsin	10	1	189	2	367	7	2,704	2,278	4,982
Wyoming	1	0	0	0	0	1	78	114	192
Outlying possessions:									
Hawaii	1	0	0	0	0	1	45	14	59
Porto Rico	1	0	0	0	0	1	24	49	73

TABLE 15.—*Students pursuing certain professional courses in universities, colleges, and professional schools in 1917–18.*

States.	Theology.			Law.			Medicine.			Veterinary medicine.			Dentistry.			Pharmacy.		
	Schools reporting.	Men.	Women.	Schools reporting.	Men.	Women.	Schools reporting.	Men.	Women.	Schools reporting.	Men.	Women.	Schools reporting.	Men.	Women.	Schools reporting.	Men.	Women.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
United States	142	8,574	780	101	10,998	822	72	13,160	643	19	1,250	0	36	8,185	129	55	3,597	456
Alabama	2	15	0	1	64	1	1	51	0	1	44	0	0	0	0	2	24	2
Arizona	0	0	0	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0
Arkansas	1	12	0	1	15	5	1	52	0	0	0	0	0	0	0	0	0	0
California	5	138	12	5	562	81	3	357	56	0	0	0	2	375	10	2	134	13
Colorado	1	53	9	2	81	3	1	74	5	1	33	0	1	157	6	1	12	9
Connecticut	3	144	6	1	68	0	1	71	4	0	0	0	0	0	0	0	0	0
Delaware	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dist. of Columbia	2	102	1	6	1,362	119	3	287	7	1	57	0	3	376	8	2	52	4
Florida	0	0	0	1	46	0	0	0	0	0	0	0	0	0	0	0	0	0
Georgia	4	298	16	3	121	0	1	134	0	1	8	0	0	0	0	1	16	0
Idaho	0	0	0	1	25	0	0	0	0	0	0	0	0	0	0	0	0	0
Illinois	15	1,275	120	7	1,195	70	5	1,539	74	1	190	0	2	687	16	2	207	16
Indiana	1	75	0	2	170	0	1	216	6	1	93	0	1	223	0	3	77	5
Iowa	4	135	9	2	140	5	1	234	10	1	114	0	1	269	3	1	35	6
Kansas	3	69	1	2	162	5	1	138	32	1	64	0	0	0	0	1	37	5
Kentucky	2	351	91	2	66	4	1	103	0	0	0	0	0	0	0	1	50	2
Louisiana	0	0	0	3	136	6	1	510	17	0	0	0	2	108	2	2	46	8
Maine	0	0	0	1	34	0	1	44	0	0	0	0	0	0	0	0	0	0
Maryland	3	441	0	0	......	....	1	334	56	8	0	0	2	335	3	0	......	....
Massachusetts	8	391	9	4	1,051	108	3	813	40	0	0	0	2	707	11	1	167	24
Michigan	1	29	0	3	472	31	2	520	28	1	53	0	1	325	12	1	70	9
Minnesota	6	447	0	2	272	2	1	283	13	0	0	0	1	336	4	1	59	18
Mississippi	0	0	0	2	48	2	1	58	0	0	0	0	0	0	0	1	15	1
Missouri	7	906	87	5	497	13	4	521	22	1	106	0	4	655	3	1	44	2
Montana	0	0	0	1	26	6	0	0	0	0	0	0	0	0	0	1	11	9
Nebraska	2	75	0	2	210	2	2	360	9	0	0	0	1	115	0	1	31	9
Nevada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Hampshire	1	12	0	0	0	0	1	31	0	0	0	0	0	0	0	0	0	0
New Jersey	4	342	1	1	164	18	0	0	0	0	0	0	0	0	0	0	0	0
New Mexico	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New York	13	788	80	8	1,998	243	8	3,011	86	2	137	0	2	963	4	5	1,168	115
North Carolina	5	95	3	3	117	3	2	92	0	0	0	0	0	0	0	1	25	1
North Dakota	0	0	0	1	30	3	1	28	2	1	11	0	0	0	0	1	18	2
Ohio	14	584	32	6	482	29	4	552	24	2	180	0	2	333	10	5	193	22
Oklahoma	1	86	26	1	79	2	1	71	4	0	0	0	0	0	0	1	50	6
Oregon	2	89	78	2	24	8	1	72	6	0	0	0	1	304	7	2	53	21
Pennsylvania	14	694	10	3	284	12	5	1,216	103	1	68	0	3	1,202	24	3	684	67
Rhode Island	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Carolina	1	20	0	1	40	3	0	0	0	0	0	0	0	0	0	0	0	0
South Dakota	0	0	0	1	37	2	1	51	2	0	0	0	0	0	0	0	15	4
Tennessee	4	69	23	3	144	5	3	408	4	0	0	0	3	323	3	3	42	7
Texas	6	530	166	2	157	12	2	264	20	1	14	0	0	0	0	2	89	13
Utah	0	0	0	1	49	0	1	94	1	1	52	0	0	0	0	0	0	0
Vermont	1	11	0	0	0	0	1	105	0	0	0	0	0	0	0	0	0	0
Virginia	4	223	0	3	200	0	2	240	0	0	0	0	1	95	0	1	42	3
Washington	0	0	0	2	77	8	0	0	0	1	26	0	0	0	0	2	60	42
West Virginia	0	0	0	1	31	1	1	31	3	0	0	0	0	0	0	1	17	2
Wisconsin	2	75	0	2	251	10	2	195	9	0	0	0	1	297	3	2	54	9
Wyoming	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 16.—*Students in engineering courses in universities, colleges, and technological schools in 1917–18.*

States.	General engineering.	Chemical engineering.	Civil engineering.	Electrical engineering.	Mechanical engineering.	Mining engineering.	Ceramic engineering.	Textile engineering.	Architectural engineering.	Total engineering students.
1	2	3	4	5	6	7	8	9	10	11
Continental United States.	7,203	4,548	5,108	5,683	5,944	1,298	111	156	261	31,120
Alabama		53	75	221	237	8				594
Arizona			10	17	16	51				94
Arkansas	44	9	30	9	19	1				112
California	35	313	300	109	418	170				1,345
Colorado	166	43	56	92	34	164				555
Connecticut		105	77	47	142	17				388
Delaware	11	24	17	24	18					94
District of Columbia	407	137	84	64	65					757
Florida	42	5	5	11	4					67
Georgia		46	96	264	250			61		717
Idaho		10	13	14	15	14				66
Illinois[1]	86	233	232	330	324	18	26		133	1,465
Indiana		259	218	340	353	7			8	1,185
Iowa[2]	87	76	153	216	114		6		57	752
Kansas[3]	514		19	51	42					639
Kentucky			45	137		19				201
Louisiana[4]	91	37	45	77	12					333
Maine	16	94	54	82	76					322
Maryland	133		16	18	10					177
Massachusetts[5]	286	331	272	319	360	59				1,920
Michigan[6]	1,297	164	227	186	251	69			22	2,261
Minnesota	170	99	70	129	55	74				597
Mississippi	159		46	59	11					275
Missouri[7]	330	65	65	66	51	75				672
Montana		8	20	41	15	52			11	147
Nebraska[8]		4	101	80	55				5	252
Nevada			13		40	27				80
New Hampshire		50	20	58	32					160
New Jersey	98	48	88	17	137		3			391
New Mexico[9]			4	6	6	9				33
New York[10]	312	763	944	590	1,090	17				3,721
North Carolina		75	79	118	52			66		390
North Dakota	37	9	17	12	16	13	11		1	116
Ohio	705	363	395	454	426	63	65		17	2,488
Oklahoma	181	6	14	36	16					253
Oregon[11]		27	23	83	95	41				286
Pennsylvania[12]	702	695	501	453	481	218				3,177
Rhode Island	48	18	9	13	23					111
South Carolina	218		82		62			13		325
South Dakota	39	12	23	5	46					125
Tennessee	135	6	10	13	6					170
Texas	9	77	180	232	98			16	7	619
Utah[13]	147	2	3	4	2	6				233
Vermont			92	60	22					174
Virginia	442	79	117	180	94	13				925
Washington[14]		93	76	189	139	77				581
West Virginia	8	54	44	41	18					165
Wisconsin	248	56	73	114	84	11				586
Wyoming			5	2	12	5				24
Outlying possessions:										
Hawaii[15]			16							16
Porto Rico[16]	34		7	1	3					45

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[1] Fire-protection engineering, 34; railway engineering, 38; municipal and sanitary engineering, 11.

[2] Agricultural engineering, 43.

[3] Agricultural engineering, 7; flour-mill engineering, 6.

[4] Sugar engineering, 71.

[5] Electrochemical engineering, 44; sanitary engineering, 22; naval architecture, 77; engineering administration, 150.

[6] Marine engineering, 38; aeronautical engineering, 7.

[7] Metallurgical engineering, 20.

[8] Agricultural engineering, 7.

[9] Geological engineering, 2; metallurgical engineering, 6.

[10] Metallurgical engineering, 5.

[11] Highway engineering, 15; irrigation engineering, 2.

[12] Sanitary engineering, 10; metallurgical engineering, 53; commercial engineering, 29; electrometallurgy, 35.

[13] Agricultural engineering, 69.

[14] Hydroelectrical engineering, 7.

[15] Sugar technology, 19.

[16] Sugar technology, 13.

TABLE 17.—*Students in summer school, short winter course, extension courses, and correspondence courses in universities, colleges, and professional schools in 1917–18.*

States.	Summer school (1917).		Short winter course.		Extension courses.[1]		Correspondence courses.[2]	
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.
1	2	3	4	5	6	7	8	9
Continental United States	25,538	52,521	8,429	3,667	15,063	17,817	2,879	2,459
Alabama	490	1,220	....	....	23	170	....	....
Arizona	....	....	121	137	....	....	10	10
Arkansas	42	160	139	0	....	....	30	35
California	1,469	4,085	....	....	(8,420)		(2,456)	
Colorado	278	1,706	....	....	213	234	86	207
Connecticut	....	....	....	....	....	....	....	....
Delaware	25	256	....	....	....	....	....	....
Dist. Columbia	115	900	....	....	....	....	....	....
Florida	154	713	159	84	....	....	122	0
Georgia	416	916	....	....	....	....	....	....
Idaho	....	....	90	14	....	....	34	0
Illinois	3,024	3,475	25	85	5,240	1,144	131	0
Indiana[3]	131	465	61	13	0	238	3	11
Iowa	929	4,689	2,084	917	10	19	32	22
Kansas	536	1,012	274	104	541	440	547	535
Kentucky	53	63	48	9	....	....	95	12
Louisiana	649	1,145	164	6	7	81	....	....
Maine	42	50	....	....	....	....	....	....
Maryland	216	524	13	37	....	....	....	....
Massachusetts[4]	1,188	1,259	84	6	0	155	582	289
Michigan	1,136	519	356	0	....	....	....	....
Minnesota	193	781	1,710	1,434	1,196	1,038	0	11
Mississippi	260	374	58	0	....	....	27	21
Missouri	426	742	167	14	335	419	202	350
Montana	53	402	176	112	3	114	9	30
Nebraska	302	1,132	164	1	....	....	192	128
Nevada	14	87	17	0	....	....	....	....
New Hampshire	72	156	....	....	....	....	....	....
New Jersey	236	507	76	17	....	....	0	50
New Mexico	....	....	....	....	....	....	....	....
New York[5]	4,915	7,318	159	39	2,807	7,718	....	....
North Carolina	694	792	35	0	302	107	20	5
North Dakota	123	386	168	6	89	.500	83	104
Ohio	1,505	3,582	149	73	830	2,027	32	67
Oklahoma	537	1,137	117	3	20	17	156	114
Oregon	244	622	969	452	....	....	....	....
Pennsylvania	358	1,227	76	16	734	236	(5,500)	
Rhode Island	....	....	....	....	(354)		....	....
South Carolina	21	156	....	....	....	....	....	....
South Dakota	163	561	66	7	74	200	24	29
Tennessee	678	2,116	94	43	....	....	28	0
Texas	1,998	2,751	....	....	....	....	166	154
Utah	126	578	....	....	735	2,062	....	....
Vermont	62	475	18	0	....	....	....	....
Virginia	119	152	52	1	....	....	18	0
Washington	398	1,221	206	34	487	793	128	141
West Virginia	142	359	5	0	1,417	0	54	23
Wisconsin	986	1,509	326	3	0	52	....	....
Wyoming[6]	20	241	3	0	0	53	68	111
Outlying possessions:								
Hawaii	....	....	....	....	....	....	....	....
Porto Rico	27	106	....	....	62	47	....	....

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[1] Also 23,664 extension students reported not divided as to sex.
[2] Also 9,960 correspondence students reported not divided as to sex.
[3] Also 210 extension students not divided as to sex; correspondence students, 2,004 not divided as to sex.
[4] Also 2,997 extension students not divided as to sex.
[5] Also 2,296 extension students not divided as to sex.
[6] Also 9,388 extension students not divided as to sex.

TABLE 18.—*Number of first degrees conferred on men by universities, colleges, and technological schools in 1917–18.*

States.	Arts and sciences.	Agriculture.	Architecture.	Commerce.	Education.	Forestry.	Journalism.	Music.	General engineering.	Chemical engineering.	Civil engineering.	Electrical engineering.	Mechanical engineering.	Mining engineering.	Textile engineering.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Continental United States	9,092	1,506	134	610	224	33	29	13	160	404	811	738	781	166	19
Alabama	96	28	1	3	6	....	....	....	....	4	5	22	10	2	....
Arizona	8	7	....	....	....	....	....	....	....	....	1	2	1	....	....
Arkansas	34	7	....	....	....	....	....	....	....	....	2	4	....	....	....
California	356	48	6	17	....	....	....	....	8	20	27	24	22	15	....
Colorado	90	21	....	10	....	1	....	....	....	2	16	22	10	13	....
Connecticut	699	11	6	....	....	3	....	4	....	22	8	10	24	1	....
Delaware	9	8	....	....	....	....	....	....	....	2	6	4	3	....	....
District of Columbia	113	....	4	....	7	....	....	....	....	7	7	4	1	....	....
Florida	15	6	....	....	1	....	....	....	....	....	....	1	....	....	....
Georgia	97	10	4	10	....	....	....	....	....	4	8	18	30	....	3
Idaho	14	4	....	....	....	....	....	....	....	2	....	4	....	1	....
Illinois	515	106	15	53	17	....	....	1	2	22	28	44	33	5	....
Indiana	210	72	2	....	....	....	....	....	....	25	33	45	49	....	....
Iowa	286	116	....	....	....	4	....	....	....	5	36	28	15	1	....
Kansas	204	55	4	9	....	....	3	2	29	....	6	10	7	....	....
Kentucky	57	20	....	....	....	....	....	....	....	....	3	20	....	2	....
Louisiana	35	20	4	1	8	....	....	....	....	6	7	12	9	....	....
Maine	94	25	....	....	....	....	....	....	....	8	4	12	6	....	....
Maryland	146	10	....	....	1	....	....	....	26	....	2	....	....	....	....
Massachusetts	704	50	25	62	....	3	....	....	....	66	58	64	73	6	6
Michigan	331	71	9	2	....	....	....	2	....	30	84	46	63	29	....
Minnesota	219	34	4	....	7	5	....	1	2	9	8	10	8	13	....
Mississippi	60	29	....	3	....	....	....	....	....	....	8	11	4	....	....
Missouri	225	55	1	8	37	....	16	....	30	2	11	3	5	11	....
Montana	12	4	....	....	....	1	1	....	....	....	3	3	4	3	....
Nebraska	141	82	....	11	....	....	....	....	....	....	6	8	6	....	....
Nevada	4	1	....	....	....	....	....	....	....	....	1	....	....	....	....
New Hampshire	292	23	....	....	....	1	....	....	....	6	4	....	2	....	....
New Jersey	118	12	....	....	....	....	....	....	....	6	9	4	66	....	....
New Mexico	4	3	....	....	....	....	....	....	....	....	....	....	....	....	....
New York	1,010	148	16	206	39	4	8	1	....	45	142	64	104	9	....
North Carolina	256	23	....	....	....	....	....	....	....	4	9	9	6	....	5
North Dakota	32	6	....	....	6	....	....	1	....	....	5	7	3	2	....
Ohio	601	54	4	24	38	....	....	....	3	35	58	38	46	8	....
Oklahoma	69	14	....	2	....	....	....	....	....	....	4	11	7	....	....
Oregon	65	54	....	11	....	5	....	....	....	1	2	8	12	3	....
Pennsylvania	648	80	23	97	9	3	....	1	48	28	91	72	63	18	....
Rhode Island	68	4	....	....	....	....	....	....	13	3	1	1	3	....	....
South Carolina	204	58	2	....	....	....	....	....	....	....	15	....	34	....	4
South Dakota	25	14	....	....	....	....	....	....	....	....	1	2	....	5	....
Tennessee	85	....	....	....	27	....	....	....	3	3	5	4	....	....	....
Texas	153	29	4	....	....	....	....	....	1	2	12	15	2	....	1
Utah	23	12	....	3	23	....	....	....	....	1	3	2	1	4	....
Vermont	32	11	....	....	....	....	....	....	....	....	8	2	2	....	....
Virginia	235	5	....	....	....	....	....	....	....	10	26	24	8	....	....
Washington	83	8	....	2	1	3	....	....	....	7	11	14	2	7	....
West Virginia	63	17	....	....	....	....	....	....	....	....	4	4	4	....	....
Wisconsin	251	80	....	76	....	....	1	....	....	17	21	26	31	5	....
Wyoming	1	1	....	....	2	....	....	....	....	....	2	....	2	3	....
Outlying possessions:															
Hawaii	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Porto Rico	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

TABLE 19.—*Graduate degrees conferred on men by universities, colleges, and technological schools in 1917–18.*

States.	A. M.	Ph. M.	M. Arch.	M. C. S.	M. F.	M. S.	M. S. in Agri.	M. S. F.	Chem. E.	C. E.	E. E.	E. M.	Mech. E.	Met. E.	Ph. D.	D. Sc.	D. P. H.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
United States	1,332	10	2	4	17	273	35	4	7	44	14	9	34	2	499	7	4
Alabama	1					4				1	1		2				
Arizona	1					1											
Arkansas																	
California	61					10						1		1	15		
Colorado	22			1				1									
Connecticut	19				15	8						4	6	1	33		
Delaware						1											
District of Columbia	34	1				1									24		
Florida	1					1											
Georgia	10					6	3										
Idaho						1											
Illinois[1]	184		1			31			1	5	2		3		107		
Indiana	17					4	7			8	5				2		
Iowa	15					16				4			1		9		
Kansas	18					10				1	1						
Kentucky	4												5				
Louisiana	4					3					1		1				
Maine									1	2							
Maryland	24					3									11		
Massachusetts	96					19					1				58	3	2
Michigan[2]	46					18		1		1					11	1	1
Minnesota	13					13					1		2		10		
Mississippi	3					1											
Missouri	50			1								3	2		8		
Montana	1					1											
Nebraska	23					2									3		
Nevada										1							
New Hampshire						2											
New Jersey	23					3				1					14	1	
New Mexico																	
New York[3]	320			2	2	23	14	2		13	1		2		124		1
North Carolina	29						2						1		1		
North Dakota	3						2										
Ohio	44		1			21						1	3		10		
Oklahoma	9					1											
Oregon	2						3										
Pennsylvania	106	3				20			3	2	1		3		25	2	
Rhode Island	19					1									8		
South Carolina	19																
South Dakota	3					5									1		
Tennessee	14					1											
Texas	21					1	3								1		
Utah[4]	3					2											
Vermont	2																
Virginia	10						1			1			2		1		
Washington	5					12									1		
West Virginia	6																
Wisconsin	47	6				27			2	4			1		22		
Wyoming																	

[1] Fire protection engineering, 1.
[2] Master of science in public health, 1; master of landscape gardening, 1.
[3] Doctor of pedagogy, 2; master of pedagogy, 13; master of landscape design, 1.
[4] Master of science in metallurgy, 4.

TABLE 20.—*Degrees conferred on women by universities, colleges, and technological schools in 1917–18.*

States.	First degrees in—									Graduate degrees.		
	Arts and sciences.	Agriculture.	Architecture.	Commerce.	Education.	Fine arts (art).	Home economics.	Music.	Oratory.	A. M.	M. S.	Ph. D.
1	2	3	4	5	6	7	8	9	10	11	12	13
Continental United States	11,243	84	3	30	945	22	773	217	15	1,033	53	63
Alabama	82									1		
Arizona	13									2		
Arkansas	42											
California	679	2						21		102	4	3
Colorado [1]	271						24			17		
Connecticut	0							2		2	2	5
Delaware	13	1					9					
Dist. of Columbia	136				14					27	1	2
Florida	50							1		6		
Georgia	126						2	39	2	1		
Idaho	30						9					
Illinois	803	6		3	92		91	29	2	110	4	8
Indiana	309									13	4	1
Iowa	507	4					92	4		19	6	3
Kansas	338	1				8	76	2		24	2	
Kentucky	79						6			7	1	
Louisiana	40				27			1		7		
Maine	65						10			1		
Maryland	159									6		1
Massachusetts	1,328	4		5	5					63		2
Michigan	371						57	2		33	6	2
Minnesota	337				33		64			19	1	1
Mississippi [2]	185							13		2		
Missouri	135	2	2	1	116					20		1
Montana	42						15					
Nebraska	221					2	34			17		1
Nevada	15									1		
New Hampshire	20											
New Jersey	45									1		1
New Mexico	6						4					
New York [3]	1,446	59		12	324	5		15	11	359	8	16
North Carolina	82							6		3		
North Dakota	60				35		6			3		
Ohio	748			3	158	1	47	10		32	2	1
Oklahoma	117					6	3	8		7		
Oregon	150			2				5		1	2	
Pennsylvania [4]	587	1			44		30	13		45	2	11
Rhode Island	51						6			8	1	3
South Carolina	149							10		7		
South Dakota	57						19			2		
Tennessee	86				51			8		5	1	
Texas	313		1				50			11		
Utah	18				43		17			1		
Vermont	62						5					
Virginia	165						6					
Washington	254	1			2		21	21		8	3	
West Virginia	40	2								1		
Wisconsin [5]	404	1		4			66	7		39	3	1
Wyoming	7				1		4					
Outlying possessions:												
Hawaii	1											
Porto Rico												

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[1] Master of commercial science, 1; graduate in public health, 1.

[2] Master of music, 1.

[3] Master of science in agriculture, 1; master of forestry, 1; master of architecture, 1; doctor of pedagogy, 1; master of pedagogy, 1; master of commercial science, 1.

[4] Doctor of science, 1.

[5] Master of philosophy, 1

TABLE 21.—*Degrees conferred on men and on women in certain professional courses by universities, colleges, and professional schools in 1917–18.*

States	Theology.		Law.		Medicine.		Veterinary medicine.		Dentistry.		Pharmacy.	
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.
1	2	3	4	5	6	7	8	9	10	11	12	13
United States..	816	12	2,272	97	2,339	84	475	0	2,601	33	1,037	97
Alabama..........	7	0	14	0	9	0	17	0	......	......	8	0
Arizona..........	......	......	2	0	......	......	......	......	......	......	......	......
Arkansas..........	3	0	4	0	21	0	......	......	......	......	......	......
California..........	17	0	69	12	41	5	......	......	113	1	46	3
Colorado..........	8	0	19	0	6	2	9	0	60	3	4	1
Connecticut..........	41	0	38	0	18	0	......	......	......	......	......	......
Delaware..........	......	......	......	......	......	......	......	......	......	......	......	......
Dist. Columbia.....	18	0	425	10	63	1	12	0	92	2	15	0
Florida..........	......	......	13	0	......	......	......	......	......	......	......	......
Georgia..........	14	0	23	0	27	0	......	......	......	......	2	0
Idaho..........	......	......	......	......	......	......	......	......	......	......	......	......
Illinois..........	64	4	227	11	361	16	118	0	201	4	48	6
Indiana..........	......	......	39	0	40	0	55	0	84	0	17	2
Iowa..........	1	0	17	0	26	2	30	0	64	2	11	1
Kansas..........	9	0	23	2	18	0	15	0	......	......	8	0
Kentucky..........	43	0	16	1	16	0	......	......	......	......	13	1
Louisiana..........	......	......	15	0	62	1	......	......	21	0	2	2
Maine..........	......	......	14	0	18	0	......	......	......	......	......	......
Maryland..........	5	0	......	......	78	9	......	......	154	3	......	......
Massachusetts......	56	3	205	6	185	6	......	......	347	3	23	1
Michigan..........	......	......	97	0	85	4	10	0	110	2	21	2
Minnesota..........	46	0	44	0	17	2	......	......	74	1	10	4
Mississippi..........	......	......	19	0	......	......	......	......	......	......	8	0
Missouri..........	151	0	94	5	99	1	53	0	249	1	19	1
Montana..........	......	......	1	3	......	......	......	......	......	......	2	0
Nebraska..........	......	......	19	0	39	1	......	......	27	0	10	6
Nevada..........	......	......	......	......	......	......	......	......	......	......	......	......
New Hampshire...	1	0	......	......	......	......	......	......	......	......	......	......
New Jersey..........	30	0	......	......	......	......	......	......	......	......	......	......
New Mexico..........	......	......	......	......	......	......	......	......	......	......	......	......
New York..........	88	2	420	22	400	11	71	0	332	1	378	34
North Carolina.....	5	0	14	0	......	......	......	......	......	......	9	0
North Dakota......	......	......	1	1	6	0	......	......	......	......	5	0
Ohio..........	37	0	114	8	123	1	40	0	82	3	50	5
Oklahoma..........	14	0	18	1	20	0	......	......	......	......	12	3
Oregon..........	5	3	9	0	......	......	......	......	......	......	24	1
Pennsylvania......	96	0	62	5	259	16	37	0	387	6	207	12
Rhode Island......	......	......	......	......	......	......	......	......	......	......	......	......
South Carolina.....	......	......	13	2	......	......	......	......	......	......	......	......
South Dakota......	......	......	12	0	7	0	......	......	......	......	......	......
Tennessee..........	6	0	59	4	116	2	......	......	90	1	13	2
Texas..........	16	0	31	3	52	1	......	......	......	......	32	2
Utah..........	......	......	3	0	......	......	......	......	......	......	......	......
Vermont..........	......	......	......	......	22	0	......	......	......	......	......	......
Virginia..........	35	0	35	0	65	0	......	......	21	0	12	0
Washington.......	......	......	12	1	......	......	8	0	......	......	9	7
West Virginia......	......	......	5	0	......	......	......	......	......	......	......	......
Wisconsin..........	......	......	27	0	40	3	......	......	93	0	19	1
Wyoming..........	......	......	......	......	......	......	......	......	......	......	......	......

TABLE 22.—*Honorary degrees conferred by universities, colleges, and professional schools in 1917–18.*

States.	D. D.	LL. D.	L. H. D.	Litt. D.	Ph. D.	Sc. D.	D. C. L.	Ped. D.	Mus. D.	A. M.	M. S.	Eng. D.
1	2	3	4	5	6	7	8	9	10	11	12	13
United States	263	221	8	28	5	43	3	9	4	91	12	8
Alabama	7	8										
Arizona		2								1		
Arkansas	2	2										
California	2	14								1		
Colorado	1	2								2		
Connecticut [1]	10	8				3	1		1	19	2	
Delaware		1			1							
Dist. Columbia	1	2		5		2				2	1	
Florida												
Georgia	7	5		1						2		
Idaho												
Illinois	22	5		2		2			1	1		
Indiana [2]	10	11								1		
Iowa	13	3	1	1						3		
Kansas [3]	9	2				1						
Kentucky	4	4								2		
Louisiana		1										
Maine	1	4				6			1	1		
Maryland [4]	13	8		1	2	1				4		
Massachusetts	5	5		1		2				6		
Michigan [5]	8	5		1		1				6		1
Minnesota	6	1		1								
Mississippi [6]				1					1	1		
Missouri [7]	10	5										
Montana										1		
Nebraska	3	2										
Nevada												
New Hampshire [8]		3		1		4						
New Jersey	4	7		3		3				1		1
New Mexico												
New York [9]	14	30	2	4		5		4		12	1	5
North Carolina	4	4				1						
North Dakota		1										
Ohio [10]	23	18	3			2		4		8	1	
Oklahoma												
Oregon	2											
Pennsylvania [11]	35	28	1	4		8	1	1		12	7	1
Rhode Island	2	3		1						3		
South Carolina	8	6		1								
South Dakota [12]	2	2										
Tennessee	10	4			1	1	1			2		
Texas												
Utah												
Vermont		4	1									
Virginia	20	6			1							
Washington		1										
West Virginia												
Wisconsin	5	4				1						
Wyoming												

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[1] Bachelor of music, 1; bachelor of divinity, 1.
[2] Doctor of medicine, 1.
[3] Doctor of mechanical engineering, 2; civil engineering, 7; electrical engineering, 2.
[4] Doctor of agriculture, 1; bachelor of divinity, 1.
[5] Master of engineering, 1.
[6] Master of music, 1.
[7] Doctor of sacred theology, 4.
[8] Master of pedagogy, 1.
[9] Doctor of commercial science, 1; master of humane letters, 1; doctor of sacred theology, 1; master of civil engineering, 1; doctor of public health, 2.
[10] Bachelor of literature, 1.
[11] Doctor of jurisprudence, 1; doctor of chemistry, 1; master of philosophy, 1; bachelor of science in architecture, 1; domestic science, 4; secretarial studies, 2.
[12] Mining engineering, 1.

TABLE 23.—*Summary of degrees conferred by universities, colleges, and technological schools in 1917–18.*

States.	Baccalaureate degrees.			Graduate degrees.			Honorary degrees.
	Men.	Women.	Total.	Men.	Women.	Total.	
1	2	3	4	5	6	7	8
Continental United States	14,720	13,332	28,052	2,320	1,160	3,480	736
Alabama	177	82	259	9	1	10	15
Arizona	19	13	32	2	2	4	3
Arkansas	47	42	89	0	0	0	4
California	538	702	1,240	88	109	197	17
Colorado	185	295	480	24	19	43	5
Connecticut	788	2	790	86	9	95	46
Delaware	32	23	55	1	0	1	2
District of Columbia	143	150	293	60	30	90	13
Florida	23	51	74	2	6	8	....
Georgia	184	169	353	19	1	20	15
Idaho	25	39	64	1	0	1	....
Illinois	841	1,026	1,867	335	122	457	33
Indiana	436	309	745	43	18	61	23
Iowa	491	607	1,098	45	28	73	21
Kansas	329	425	754	30	26	56	23
Kentucky	102	85	187	9	8	17	10
Louisiana	97	68	165	9	7	16	1
Maine	149	75	224	3	1	4	13
Maryland	185	159	344	38	7	45	31
Massachusetts	1,117	1,342	2,459	179	65	244	19
Michigan	667	430	1,097	81	41	122	23
Minnesota	320	434	754	39	21	60	8
Mississippi	115	198	313	4	3	7	4
Missouri	404	256	600	64	21	85	19
Montana	31	57	88	2	0	2	1
Nebraska	204	257	461	28	18	46	5
Nevada	6	15	21	1	1	2	....
New Hampshire	328	20	348	2	0	2	9
New Jersey	215	45	260	42	2	44	19
New Mexico	7	10	17	0	0	0	....
New York	1,796	1,872	3,668	520	389	909	83
North Carolina	312	88	400	33	3	36	9
North Dakota	62	101	163	5	3	8	1
Ohio	909	967	1,876	80	35	115	60
Oklahoma	107	134	241	10	7	17	....
Oregon	161	157	318	5	3	8	2
Pennsylvania	1,181	675	1,856	165	59	224	108
Rhode Island	93	57	150	28	12	40	9
South Carolina	317	159	476	19	7	26	15
South Dakota	47	76	123	9	2	11	5
Tennessee	127	145	272	15	6	21	19
Texas	219	364	583	26	11	37	....
Utah	72	78	150	9	1	10	....
Vermont	55	67	122	2	0	2	5
Virginia	308	171	479	15	0	15	27
Washington	138	299	437	18	11	29	1
West Virginia	92	42	134	6	1	7	....
Wisconsin	508	482	990	109	44	153	10
Wyoming	11	12	23	0	0	0	....
Outlying possessions:							
Hawaii	3	0	3	....	....	....	1
Porto Rico	....	....	....	....	....	....	....

TABLE 24.—*Property of universities, colleges, and professional schools—Fellowships and scholarships in 1917–18.*

States.	Number of volumes in library.	Value of library, scientific apparatus, machinery, and furniture.	Value of grounds.	Value of buildings (including dormitories).	Value of dormitories.	Productive funds.	Number of fellowships and scholarships.
1	2	3	4	5	6	7	8
Continental United States.	23,025,736	$89,766,793	$104,069,481	$329,987,558	$55,143,845	$481,085,952	16,609
Alabama	168,642	617,390	782,000	3,276,124	1,038,681	1,885,678	165
Arizona	28,000	145,692	190,950	653,500	79,500	10,500	22
Arkansas	62,545	355,411	134,000	939,200	311,750	449,242	9
California	915,997	3,630,669	2,080,843	19,314,236	1,190,084	36,443,163	378
Colorado	337,026	1,349,376	1,550,039	3,941,647	185,385	2,427,680	174
Connecticut	1,463,070	779,495	338,202	3,159,772	916,739	26,218,180	359
Delaware	26,000	258,236	400,000	974,000	219,000	473,864	2
Dist. of Columbia	378,623	1,117,183	2,393,809	3,401,939	210,756	1,466,867	330
Florida	77,069	304,738	309,572	1,257,747	336,005	214,271	20
Georgia	219,579	880,078	2,174,882	4,753,450	1,763,264	4,149,386	242
Idaho	56,370	259,742	129,500	930,612	135,000	1,616,706	....
Illinois	1,678,442	6,598,978	8,942,207	20,195,701	3,322,427	46,928,529	1,831
Indiana	541,752	1,919,865	2,053,267	7,283,471	986,300	6,471,595	107
Iowa	597,968	4,152,106	2,144,553	12,705,439	2,361,631	9,718,046	830
Kansas	454,159	1,630,741	2,006,956	4,600,873	325,500	3,416,970	225
Kentucky	219,286	868,219	1,274,136	3,664,821	1,097,591	4,939,303	359
Louisiana	141,061	819,612	1,211,048	2,963,301	514,933	6,798,569	375
Maine	269,064	515,799	123,000	2,190,787	400,287	4,187,902	119
Maryland	447,207	2,523,188	4,299,158	15,950,008	932,761	7,665,557	657
Massachusetts	2,481,070	5,799,732	6,922,307	24,076,052	5,518,488	72,156,970	1,587
Michigan	657,684	3,357,982	1,491,864	7,602,375	844,453	3,729,501	172
Minnesota	538,030	2,907,206	3,524,757	10,162,714	2,108,156	5,397,615	379
Mississippi	106,725	733,645	683,020	2,542,190	672,150	1,279,000	96
Missouri	688,283	3,120,307	3,337,709	11,333,358	1,547,888	12,862,911	314
Montana	67,314	434,232	211,773	705,245	75,000	680,250	72
Nebraska	233,475	970,154	1,698,399	3,786,766	368,221	4,673,657	49
Nevada	31,000	236,887	415,298	230,970	72,516	330,554	7
New Hampshire	182,000	390,000	487,000	2,520,000	915,000	4,388,951	752
New Jersey	871,058	963,048	2,992,256	3,514,684	742,000	14,020,703	582
New Mexico	33,523	280,008	83,000	365,035	73,500	20,761	6
New York	2,908,176	12,074,282	15,324,262	49,912,341	6,128,116	77,384,699	1,726
North Carolina	283,029	1,248,827	1,582,057	3,964,947	1,527,379	3,160,092	540
North Dakota	103,895	644,274	424,420	1,389,310	311,000	2,390,617	33
Ohio	1,095,199	4,744,008	5,241,341	14,548,993	2,152,064	14,028,724	450
Oklahoma	75,776	673,792	223,763	1,729,687	247,000	4,087,947	37
Oregon	196,474	878,748	1,405,791	2,612,196	463,493	3,997,053	7
Pennsylvania	1,677,995	9,781,296	11,820,430	32,689,041	5,244,245	42,775,143	967
Rhode Island	272,600	146,600	14,855	324,450	....	....	255
South Carolina	209,238	1,031,050	2,291,186	4,033,117	1,369,800	1,592,643	447
South Dakota	99,037	436,981	286,800	1,752,302	387,911	1,636,090	255
Tennessee	277,195	1,185,569	2,195,235	4,793,510	1,276,768	7,553,710	304
Texas	346,714	2,452,699	1,904,659	9,067,481	3,067,028	13,796,791	66
Utah	84,838	288,924	73,700	1,398,700	....	20,000	46
Vermont	165,160	493,717	118,879	1,954,210	318,819	2,096,193	489
Virginia	469,297	1,526,411	1,852,519	8,288,993	1,674,757	7,507,164	535
Washington	213,702	1,138,305	1,433,374	3,190,825	138,628	6,572,191	42
West Virginia	80,126	366,735	400,785	1,135,643	126,892	395,436	5
Wisconsin	454,263	2,420,857	2,989,920	7,719,795	1,344,979	6,829,239	137
Wyoming	41,000	304,000	100,000	487,000	80,000	239,339	48
Outlying possessions.							
Hawaii	23,983	133,719	126,116	70,499	....	....	4
Porto Rico	7,500	97,451	65,910	186,541	....	10,850	....

TABLE 25.—*Income of public and of private universities, colleges, and professional schools in 1917-18.*

States.	Public institutions.					Private institutions.				
	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	Total income.	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	Total income.
1	2	3	4	5	6	7	8	9	10	11
Continental United States	$2,572,744	$47,608,246	$477,011	$14,657,883	$65,315,884	$19,851,270	$2,755,661	$10,227,794	$38,904,806	$71,739,531
Alabama	105,366	324,206	4,100	98,650	532,322	27,463	0	49,447	525,372	602,282
Arizona	18,448	457,647	0	79,897	555,992	0	0	0	0	0
Arkansas	6,183	340,378	0	23,213	369,774	16,010	0	9,200	139,215	164,425
California	226,316	2,366,852	118,285	921,357	3,632,810	1,075,214	0	158,647	1,249,739	2,483,600
Colorado	26,237	1,006,591	0	229,322	1,262,150	104,186	0	12,880	228,347	345,413
Connecticut	6,810	265,783	0	190,817	463,410	1,347,356	0	1,627,386	624,132	3,598,874
Delaware	26,205	282,465	30,000	85,279	423,949	0	0	0	0	0
Dist. Columbia	13,714	101,000	3,115	105,407	223,236	111,043	0	133,606	626,314	870,962
Florida	15,668	415,291	64,047	111,089	606,095	55,583	0	22,500	72,521	150,604
Georgia	26,779	525,882	2,285	151,569	706,515	225,152	0	744,228	734,800	1,704,180
Idaho	111,276	478,447	0	31,506	621,229	5,884	0	13,999	4,940	24,823
Illinois	32,451	2,493,349	36,450	513,159	3,075,409	2,602,258	0	892,546	3,380,559	6,875,363
Indiana	75,010	1,390,212	0	496,052	1,961,274	238,862	0	58,768	573,859	871,489
Iowa	58,321	2,907,348	2,000	1,027,282	3,994,951	361,217	0	259,252	1,153,908	1,774,377
Kansas	32,418	1,592,947	0	550,641	2,176,006	132,678	0	142,103	583,808	858,589
Kentucky	10,644	433,698	3,000	298,086	745,428	196,278	0	120,847	670,965	988,190
Louisiana	14,555	270,461	0	98,907	383,923	221,309	0	63,043	283,091	567,443
Maine	9,915	250,904	0	124,337	385,156	164,415	0	111,796	81,162	357,373
Maryland	6,543	3,009,265	0	46,180	3,061,988	53,412	80,775	152,605	711,894	998,686
Massachusetts	10,613	510,910	0	182,271	703,794	3,287,569	247,825	1,251,190	5,447,408	10,233,992
Michigan	148,205	2,071,786	129,058	1,248,873	3,597,922	121,455	0	138,056	241,683	501,194
Minnesota	58,052	2,032,317	0	848,100	2,938,469	180,208	0	262,639	827,108	1,269,955
Mississippi	65,836	480,272	3,000	483,387	1,032,495	15,000	0	13,492	186,602	215,094
Missouri	79,926	876,958	0	367,357	1,324,241	469,524	0	213,701	909,107	1,592,332
Montana	35,000	688,773	0	94,243	818,016	0	0	0	0	0

TABLE 25.—*Income of public and of private universities, colleges, and professional schools in 1917–18*—Continued.

States.	Public institutions.					Private institutions.				
	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	Total income.	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	Total income.
1	2	3	4	5	6	7	8	9	10	11
Nebraska	$57,007	$1,306,583	0	$377,522	$1,741,112	$220,843	0	$123,941	$291,931	$636,715
Nevada	15,283	237,256	0	45,230	297,769	0	0	0	0	0
New Hampshire	39,866	224,650	$125	109,182	373,823	197,017	$15,000	89,648	280,135	581,800
New Jersey	0	0	0	0	0	491,886	225,374	370,100	638,626	1,725,986
New Mexico	48,782	351,895	131	79,651	480,459	0	0	0	0	0
New York	0	2,695,519	1,300	77,464	2,774,283	3,483,469	1,201,058	1,154,285	7,973,265	13,812,077
North Carolina	19,819	547,226	5,057	223,034	795,136	185,750	0	65,628	588,424	839,802
North Dakota	136,795	458,734	0	188,787	784,316	4,313	0	17,852	29,496	51,661
Ohio	154,396	2,906,118	26,216	736,527	3,823,257	630,464	7,800	484,744	999,680	2,122,688
Oklahoma	160,584	1,311,190	0	126,614	1,598,388	17,426	0	30,484	57,429	105,339
Oregon	21,654	920,513	0	151,865	1,094,032	95,046	0	43,037	187,118	325,201
Pennsylvania	30,000	820,720	0	215,632	1,066,352	1,918,212	910,029	630,221	4,572,731	8,031,193
Rhode Island	2,500	130,582	0	70,015	203,097	....	....	....	....	....
South Carolina	19,696	635,515	0	270,194	925,405	57,821	0	67,319	413,833	538,973
South Dakota	60,084	931,556	0	118,879	1,110,469	69,672	0	50,668	111,797	232,137
Tennessee	26,252	1,245,121	3,650	84,938	1,359,961	326,241	19,000	212,579	740,960	1,298,780
Texas	234,684	2,039,383	5,000	976,319	3,255,386	590,537	0	145,469	915,058	1,651,064
Utah	0	574,206	0	123,584	697,790	0	0	0	0	0
Vermont	35,890	167,343	0	188,296	391,529	48,422	48,800	3,061	119,713	219,996
Virginia	126,164	522,724	14,369	656,427	1,319,684	252,718	0	192,303	1,068,747	1,513,768
Washington	95,994	1,214,324	0	369,800	1,680,118	27,083	0	656	95,110	122,799
West Virginia	6,462	619,048	0	79,632	705,142	19,160	0	2,609	78,754	100,523
Wisconsin	37,618	1,928,080	24,863	922,474	2,913,035	203,164	0	91,260	485,465	779,889
Wyoming	22,778	246,218	960	58,836	328,787	0	0	0	0	0
Outlying possessions:										
Hawaii	....	83,956	....	5,139	89,095	0	0	0	0	0
Porto Rico	1,865	100,142	....	3,758	105,765	0	0	0	0	0

TABLE 26.—*Receipts of universities, colleges, and professional schools in 1917–18.*

States.	From student fees.			From productive funds.	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts, exclusive of additions to endowments.
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Continental United States	$24,048,241	$3,219,320	$11,010,753	$22,424,014	$6,901,081	$33,490,857	$9,971,969	$5,550,565	$16,746,140	$5,154,240	$15,284,375	$153,801,555	$137,055,415
Alabama	262,403	23,912	287,323	132,829		198,445	125,761	18,100	85,000	35,447	50,384	1,219,604	1,134,604
Arizona	6,782	3,093	41,827	18,448	100,000	263,073	94,574				28,195	555,992	555,992
Arkansas	83,979	4,393	67,852	22,193		219,538	120,840	1,200	200	8,000	6,204	534,399	534,199
California	864,204	56,497	212,161	1,301,530	256,361	1,991,058	119,433	94,310	1,422,004	182,622	1,038,234	7,538,414	6,116,410
Colorado	243,994	18,881	80,272	130,423	152,000	751,811	102,780	9,288	438,134	3,592	114,522	2,045,697	1,607,563
Connecticut	432,111	143,824	43,487	1,354,166	92,057	95,000	78,726	1,144,799	1,363,420	482,587	195,527	5,425,704	4,062,284
Delaware	15,402		32,811	26,205	125,000	63,332	94,133	30,000			37,066	423,949	423,949
Dist. Columbia	341,172	63,421	182,884	124,757			101,000	27,819	191,148	108,901	144,244	1,285,346	1,094,198
Florida	43,488	9,187	128,220	71,251	114,594	218,399	82,298			86,547	2,715	756,699	756,699
Georgia	353,521	44,679	362,568	251,931	30,000	385,420	110,462	653,300	576,070	93,213	125,601	2,986,765	2,410,695
Idaho	8,020	4,560	13,285	117,160	96,000	284,032	98,415		13,662	13,999	10,581	659,714	646,052
Illinois	2,556,154	117,182	529,355	2,634,709	250,000	2,083,263	160,086	743,679	1,865,532	185,317	691,027	11,816,304	9,950,772
Indiana	528,776	26,755	138,216	313,872	186,008	1,063,721	140,483	14,862	355,264	43,906	376,164	3,188,027	2,832,763
Iowa	864,489	128,010	451,098	419,538	579,500	2,203,416	124,432	19,638	1,154,274	241,614	737,593	6,923,602	5,769,328
Kansas	337,770	46,433	175,113	165,096	192,500	1,271,633	128,814	42,997	247,272	99,106	575,133	3,281,867	3,034,597
Kentucky	176,356	31,467	209,544	206,922		294,668	139,030	56,054	93,790	67,793	551,684	1,827,308	1,733,518
Louisiana	199,427	3,967	55,746	235,864		164,000	106,461	37,282	20,200	25,761	122,858	971,566	951,366
Maine	121,266	17,148	10,027	174,330		149,202	101,702	91,000	270,974	20,796	57,058	1,013,503	742,529
Maryland	300,572	102,705	314,047	59,955	184,000	172,433	2,733,607	137,487	181,620	15,118	40,750	4,242,294	4,060,674
Massachusetts	3,019,015	237,457	1,295,278	3,298,182	82,308	574,500	101,927	603,284	2,523,355	647,906	1,077,929	13,461,141	10,937,786
Michigan	641,296	28,745	49,043	269,660	200,000	1,733,700	138,086	175,108	230,880	92,006	771,472	4,329,996	4,099,116
Minnesota	555,185	131,595	452,265	238,260	125,250	1,777,336	129,731	167,028	184,567	95,611	536,163	4,392,991	4,208,424
Mississippi	138,850	7,232	302,688	80,836	34,000	331,996	114,276	4,401	4,192	12,091	221,219	1,251,781	1,247,589
Missouri	708,074	73,646	314,479	549,450	65,128	682,726	129,104	82,538	389,527	131,163	180,265	3,306,100	2,916,573
Montana	26,945	8,046	38,459	35,000	128,000	470,906	97,867				20,793	818,016	818,016

TABLE 26.—*Receipts of universities, colleges, and professional schools in 1917–18*—Continued.

States.	From student fees.			From productive funds.	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts, exclusive of additions to endowments.
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Nebraska	$298,222	$24,027	$62,419	$277,850	$448,794	$739,213	$118,576	$71,287	$26,777	$52,654	$284,785	$2,404,604	$2,377,827
Nevada	1,904	2,868	20,625	15,283	....	145,035	92,221	....	....	....	19,833	297,769	297,769
New Hampshire	151,403	109,475	62,797	236,883	50,000	74,075	115,575	19,545	15,608	70,228	65,642	971,231	955,623
New Jersey	500,279	117,014	18,000	491,886	....	114,949	110,425	110,000	288,491	260,100	3,333	2,014,477	1,725,986
New Mexico	5,014	5,098	26,913	48,782	22,995	229,798	99,102	....	....	131	42,626	480,459	480,459
New York	3,244,719	461,984	934,017	3,483,469	123,484	2,065,061	1,708,032	460,177	1,070,354	695,408	3,410,009	17,656,714	16,586,369
North Carolina	319,830	81,336	254,861	205,569	63,812	348,707	134,707	28,897	39,497	41,788	155,431	1,674,435	1,634,938
North Dakota	54,899	5,684	66,409	141,108	....	352,075	106,659	....	4,795	17,852	91,291	840,772	835,977
Ohio	979,108	131,646	278,874	784,860	273,082	2,504,887	135,949	274,191	630,886	236,769	346,579	6,576,831	5,945,945
Oklahoma	63,953	4,320	58,140	178,010	525,000	655,457	130,733	700	100,100	29,784	57,630	1,803,827	1,703,727
Oregon	170,468	56,474	27,848	116,700	....	788,656	131,857	2,366	105,756	40,671	84,193	1,524,989	1,419,233
Pennsylvania	2,636,911	386,937	795,924	1,948,212	86,070	1,456,296	188,383	127,660	1,577,765	502,561	968,591	10,675,310	9,097,545
Rhode Island	4,822	8,252	32,589	2,500	....	40,000	90,582	....	....	....	24,352	203,097	203,097
South Carolina	174,889	24,768	428,236	77,517	55,139	428,850	151,526	42,911	17,339	24,408	56,134	1,481,717	1,464,378
South Dakota	96,098	18,317	33,556	129,706	426,861	398,250	106,445	....	41,798	50,668	82,705	1,384,404	1,342,606
Tennessee	354,511	38,902	246,924	352,493	1,000,000	129,585	134,536	50,568	490,027	165,661	185,561	3,148,768	2,658,741
Texas	434,866	119,315	602,793	825,221	405,150	1,460,818	173,415	53,226	25,685	97,243	734,403	4,932,135	4,906,450
Utah	35,784	....	....	....	72,253	405,455	96,498	....	....	....	87,800	697,790	697,790
Vermont	124,049	26,755	93,666	84,312	....	116,080	100,063	....	58,465	3,061	63,539	669,990	611,525
Virginia	651,262	169,679	672,681	378,882	19,166	378,833	124,725	116,000	145,554	90,672	231,552	2,979,006	2,833,452
Washington	236,402	17,430	100,501	123,027	69,017	1,037,914	107,393	....	200	656	110,577	1,803,117	1,802,917
West Virginia	69,214	16,854	42,060	25,622	93,500	413,357	112,191	....	51,973	2,609	30,258	857,638	805,665
Wisconsin	603,391	59,350	339,669	240,782	150,569	1,642,494	135,017	38,863	443,985	77,260	405,529	4,136,909	3,692,925
Wyoming	6,992	....	23,203	22,773	31,483	121,404	93,331	....	....	960	28,641	328,787	328,787
Outlying possessions:													
Hawaii	112	....	....	....	11,363	22,593	50,000	....	....	....	5,027	89,095	89,095
Porto Rico	1,273	....	....	1,865	142	50,000	50,000	....	329	....	2,485	106,094	105,765

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18.*

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.[1]		Students.		Total students.[1]		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
ALABAMA.																					
Auburn	Alabama Polytechnic Institute	Coed	State	1872			67	0			780	12			98	3			8	0	
	Arts and sciences				13	0			94	12			5	3							
	Graduate								9	0							4	0			
	Special [2]								45	1											
	Chemical engineering				7	0			24	1			2	0			0	0			
	Civil engineering				3	0			52	0			5	0			1	0			
	Electrical engineering				5	0			179	0			22	0			1	0			
	Mechanical engineering				10	0			217	0			10	0			2	0			
	Mining engineering				2	0			6	0			2	0			0	0			
	Agriculture				21	0			350	1			28	0			0	0			
	Architecture				2	0			18	0			1	0			0	0			
	Forestry				1	0			15	0			0	0			0	0			
	Education				2	0			122	6			0	0			0	0			
	Veterinary medicine				7	0			44	0			17	0			0	0			
	Pharmacy				2	0			20	0			6	0			0	0			
	Summer school (1917)				36	14			200	348											
	Military drill								638	0											
Birmingham	Birmingham-Southern College	Coed	M. E. So.	1897			14	0			305	23			15	4			0	1	4
	Preparatory				4	0			138	8			0	0			0	0			
	Arts and sciences				10	0			167	15			15	4			0	1			
	Education				1	0			15	6											
	Military drill								156	0											
Do.	Howard College	Coed	Bapt.	1841			13	4			123	39			14	5			0	0	5
	Arts and sciences				13	4			114	36			14	5			0	0			
	Graduate								0	1											
	Special								9	2			0	0			0	0			
	Summer school (1917)				6	5			18	120											

[1] Excluding duplicates, and those in summer school, short winter course, extension courses, and correspondence courses.

[2] Includes students in music, art, oratory, business, etc., unless they are enrolled in four-year courses leading to a collegiate degree.

TABLE 24.—*Property of universities, colleges, and professional schools—Fellowships and scholarships in 1917–18.*

States.	Number of volumes in library.	Value of library, scientific apparatus, machinery, and furniture.	Value of grounds.	Value of buildings (including dormitories).	Value of dormitories.	Productive funds.	Number of fellowships and scholarships.
1	2	3	4	5	6	7	8
Continental United States.	23,025,736	$89,766,793	$104,069,481	$329,987,558	$55,143,845	$481,085,952	16,609
Alabama	168,642	617,390	782,000	3,276,124	1,038,681	1,885,678	165
Arizona	28,000	145,692	190,950	653,500	79,500	10,500	22
Arkansas	62,545	355,411	134,000	939,200	311,750	449,242	9
California	915,997	3,630,669	2,080,843	19,314,236	1,190,084	36,443,163	378
Colorado	337,026	1,349,376	1,550,039	3,941,647	185,385	2,427,680	174
Connecticut	1,463,070	779,495	338,202	3,159,772	916,739	26,218,180	359
Delaware	26,000	258,236	400,000	974,000	219,000	473,864	2
Dist. of Columbia	378,623	1,117,183	2,393,809	3,401,939	210,756	1,466,867	330
Florida	77,069	304,738	309,572	1,257,747	336,005	214,271	20
Georgia	219,579	880,078	2,174,882	4,753,450	1,763,264	4,149,386	242
Idaho	56,370	259,742	129,500	930,612	135,000	1,616,706	....
Illinois	1,678,442	6,598,978	8,942,207	20,195,701	3,322,427	46,928,529	1,831
Indiana	541,752	1,919,865	2,053,267	7,283,471	986,300	6,471,595	107
Iowa	597,968	4,152,106	4,144,553	12,705,439	2,361,631	9,718,046	830
Kansas	454,159	1,630,741	2,006,956	4,600,873	325,500	3,416,970	225
Kentucky	219,286	868,219	1,274,136	3,664,821	1,097,591	4,939,303	359
Louisiana	141,061	819,612	1,211,048	2,963,301	514,933	6,798,569	375
Maine	269,064	515,799	123,000	2,190,787	400,287	4,187,902	119
Maryland	447,207	2,523,188	4,299,158	15,950,008	932,761	7,665,557	657
Massachusetts	2,481,070	5,799,732	6,922,307	24,076,052	5,518,488	72,156,970	1,587
Michigan	657,684	3,357,982	1,491,864	7,602,375	844,453	3,729,501	172
Minnesota	538,030	2,907,206	3,524,757	10,162,714	2,108,156	5,397,615	379
Mississippi	106,725	733,645	683,020	2,542,190	672,150	1,279,000	96
Missouri	688,283	3,120,307	3,337,709	11,333,358	1,547,888	12,862,911	314
Montana	67,314	434,232	211,773	705,245	75,000	680,250	72
Nebraska	233,475	970,154	1,698,399	3,786,766	368,221	4,673,657	49
Nevada	31,000	236,887	415,298	230,970	72,516	330,554	7
New Hampshire	182,000	390,000	487,000	2,520,000	915,000	4,388,951	752
New Jersey	871,058	963,048	2,992,256	3,514,684	742,000	14,020,703	582
New Mexico	83,523	280,008	83,000	365,035	73,500	20,761	6
New York	2,908,176	12,074,282	15,324,262	49,912,341	6,128,116	77,384,699	1,726
North Carolina	283,029	1,248,827	1,582,057	3,964,947	1,527,379	3,160,092	540
North Dakota	103,895	644,274	424,420	1,389,310	311,000	2,390,617	33
Ohio	1,095,199	4,744,008	5,241,341	14,548,993	2,152,064	14,028,724	450
Oklahoma	75,776	673,792	223,763	1,729,687	247,000	4,087,947	37
Oregon	196,474	878,748	1,405,791	2,612,196	463,493	3,997,053	7
Pennsylvania	1,677,995	9,781,296	11,820,430	32,689,041	5,244,245	42,775,143	967
Rhode Island	272,600	146,600	14,855	324,450	....	....	255
South Carolina	209,238	1,031,050	2,291,186	4,033,117	1,369,800	1,592,643	447
South Dakota	99,037	436,981	286,800	1,752,302	387,911	1,636,090	255
Tennessee	277,195	1,185,569	2,195,235	4,793,510	1,276,768	7,553,710	304
Texas	346,714	2,452,699	1,904,659	9,067,481	3,087,028	13,796,791	66
Utah	84,838	288,924	73,700	1,398,700	....	20,000	46
Vermont	165,160	493,717	118,879	1,954,210	318,819	2,096,193	489
Virginia	469,297	1,526,411	1,852,519	8,288,993	1,674,757	7,507,164	535
Washington	213,702	1,138,305	1,433,374	3,190,825	138,628	6,572,191	42
West Virginia	80,126	366,735	400,785	1,135,643	126,892	395,436	5
Wisconsin	454,263	2,420,857	2,989,920	7,719,795	1,344,979	6,829,239	137
Wyoming	41,000	304,000	100,000	487,000	80,000	239,339	48
Outlying possessions.							
Hawaii	23,933	133,719	126,116	70,499	....	....	4
Porto Rico	7,500	97,451	65,910	186,541	....	10,850	....

TABLE 25.—*Income of public and of private universities, colleges, and professional schools in 1917–18.*

States.	Public institutions.					Private institutions.				
	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	Total income.	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	Total income.
1	2	3	4	5	6	7	8	9	10	11
Continental United States	$2,572,744	$47,608,246	$477,011	$14,657,883	$65,315,884	$19,851,270	$2,755,661	$10,227,794	$38,904,806	$71,739,531
Alabama	105,366	324,206	4,100	98,650	532,322	27,463	0	49,447	525,372	602,282
Arizona	18,448	457,647	0	79,897	555,992	0	0	0	0	0
Arkansas	6,183	340,378	0	23,213	369,774	16,010	0	9,200	139,215	164,425
California	226,316	2,366,852	118,285	921,357	3,632,810	1,075,214	0	158,647	1,249,739	2,483,600
Colorado	26,237	1,006,591	0	229,322	1,262,150	104,186	0	12,880	228,347	345,413
Connecticut	6,810	265,783	0	190,817	463,410	1,347,356	0	1,627,386	624,132	3,598,874
Delaware	26,205	282,465	30,000	85,279	423,949	0	0	0	0	0
Dist. Columbia	13,714	101,000	3,115	105,407	223,236	111,043	0	133,606	626,314	870,962
Florida	15,668	415,291	64,047	111,089	606,095	55,583	0	22,500	72,521	150,604
Georgia	26,779	525,882	2,285	151,569	706,515	225,152	0	744,228	734,800	1,704,180
Idaho	111,276	478,447	0	31,506	621,229	5,884	0	13,999	4,940	24,823
Illinois	32,451	2,493,349	36,450	513,159	3,075,409	2,602,258	0	892,546	3,380,559	6,875,363
Indiana	75,010	1,390,212	0	496,052	1,961,274	238,862	0	58,768	573,859	871,489
Iowa	58,321	2,907,348	2,000	1,027,282	3,994,951	361,217	0	259,252	1,153,908	1,774,377
Kansas	32,418	1,592,947	0	550,641	2,176,006	132,678	0	142,103	583,808	858,589
Kentucky	10,644	433,698	3,000	298,086	745,428	196,278	0	120,847	670,965	988,190
Louisiana	14,555	270,461	0	98,907	383,923	221,309	0	63,043	283,091	567,443
Maine	9,915	250,904	0	124,337	385,156	164,415	0	111,796	81,162	357,373
Maryland	6,543	3,009,265	0	46,180	3,061,988	53,412	80,775	152,606	711,894	998,686
Massachusetts	10,613	510,910	0	182,271	703,794	3,287,569	247,825	1,251,190	5,447,408	10,233,992
Michigan	148,205	2,071,786	129,058	1,248,873	3,597,922	121,455	0	138,056	241,683	501,194
Minnesota	58,052	2,032,317	0	848,100	2,938,469	180,208	0	262,639	827,108	1,269,955
Mississippi	65,836	480,272	3,000	483,387	1,032,495	15,000	0	13,492	186,602	215,094
Missouri	79,926	876,958	0	367,357	1,324,241	469,524	0	213,701	909,107	1,592,332
Montana	35,000	688,773	0	94,243	818,016	0	0	0	0	0

TABLE 25.—*Income of public and of private universities, colleges, and professional schools in 1917–18*—Continued.

States.	Public institutions.					Private institutions.				
	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	Total income.	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	Total income.
1	2	3	4	5	6	7	8	9	10	11
Nebraska	$57,007	$1,306,583	0	$377,522	$1,741,112	$220,843	0	$123,941	$291,931	$636,715
Nevada	15,283	237,256	0	45,230	297,769	0	0	0	0	0
New Hampshire	39,866	224,650	$125	109,182	373,823	197,017	$15,000	89,648	280,135	581,800
New Jersey	0	0	0	0	0	491,886	225,374	370,100	638,626	1,725,986
New Mexico	48,782	351,895	131	79,651	480,459	0	0	0	0	0
New York	0	2,695,519	1,300	77,464	2,774,283	3,483,469	1,201,058	1,154,285	7,973,265	13,812,077
North Carolina	19,819	547,226	5,057	223,034	795,136	185,750	0	65,628	588,424	839,802
North Dakota	136,795	458,734	0	188,787	784,316	4,313	0	17,852	29,496	51,661
Ohio	154,396	2,906,118	26,216	736,527	3,823,257	630,464	7,800	484,744	999,680	2,122,688
Oklahoma	160,584	1,311,190	0	126,614	1,598,388	17,426	0	30,484	57,429	105,339
Oregon	21,654	920,513	0	151,865	1,094,032	95,046	0	43,037	187,118	325,201
Pennsylvania	30,000	820,720	0	215,632	1,066,352	1,918,212	910,029	630,221	4,572,731	8,031,193
Rhode Island	2,500	130,582	0	70,015	203,097	....	....	....	....	....
South Carolina	19,696	635,515	0	270,194	925,405	57,821	0	67,319	413,833	538,973
South Dakota	60,084	931,556	0	118,879	1,110,469	69,672	0	50,668	111,797	232,137
Tennessee	26,252	1,245,121	3,650	84,938	1,359,961	326,241	19,000	212,579	740,960	1,298,780
Texas	234,684	2,039,383	5,000	976,319	3,255,386	590,537	0	145,469	915,058	1,651,064
Utah	0	574,206	0	123,584	697,790	0	0	0	0	0
Vermont	35,890	167,343	0	188,296	391,529	48,422	48,800	3,061	119,713	219,996
Virginia	126,164	522,724	14,369	656,427	1,319,684	252,718	0	192,303	1,068,747	1,513,768
Washington	95,994	1,214,324	0	369,800	1,680,118	27,033	0	656	95,110	122,799
West Virginia	6,462	619,048	0	79,632	705,142	19,160	0	2,609	78,754	100,523
Wisconsin	37,618	1,928,080	24,863	922,474	2,913,035	208,164	0	91,260	485,465	779,889
Wyoming	22,773	246,218	960	58,836	328,787	0	0	0	0	0
Outlying possessions:										
Hawaii	....	83,956	....	5,139	89,095	0	0	0	0	0
Porto Rico	1,865	100,142	....	3,758	105,765	0	0	0	0	0

TABLE 26.—*Receipts of universities, colleges, and professional schools in 1917–18.*

States.	From student fees.			From productive funds.	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts, exclusive of additions to endowments.
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Continental United States..	$24,048,241	$3,219,320	$11,010,753	$22,424,014	$6,901,081	$33,490,857	$9,971,969	$5,550,565	$16,746,140	$5,154,240	$15,284,375	$153,801,555	$137,055,415
Alabama	262,403	23,912	287,323	132,829		198,445	125,761	18,100	85,000	35,447	50,384	1,219,604	1,134,604
Arizona	6,782	3,093	41,827	18,448	100,000	263,073	94,574				28,195	555,992	555,992
Arkansas	83,979	4,393	67,852	22,193		219,538	120,840	1,200	200	8,000	6,204	534,399	534,199
California	864,204	56,497	212,161	1,301,530	256,361	1,991,058	119,433	94,310	1,422,004	182,622	1,038,234	7,538,414	6,116,410
Colorado	243,994	18,881	80,272	130,423	152,000	751,811	102,780	9,288	438,134	3,592	114,522	2,045,697	1,607,563
Connecticut	432,111	143,824	43,487	1,354,166	92,057	95,000	78,726	1,144,799	1,363,420	482,587	195,527	5,425,704	4,062,284
Delaware	15,402		32,811	26,205	125,000	63,332	94,133	30,000			37,066	423,949	423,949
Dist. Columbia	341,172	63,421	182,884	124,757			101,000	27,819	191,148	108,901	144,244	1,285,346	1,094,198
Florida	43,488	9,187	128,220	71,251	114,594	218,399	82,298			86,547	2,715	756,699	756,699
Georgia	353,521	44,679	362,568	251,931	30,000	385,420	110,462	653,300	576,070	93,213	125,601	2,986,765	2,410,695
Idaho	8,020	4,560	13,285	117,160	96,000	284,032	98,415		13,662	13,999	10,581	659,714	646,052
Illinois	2,556,154	117,182	529,355	2,634,709	250,000	2,083,263	160,086	743,679	1,865,532	185,317	691,027	11,816,304	9,950,772
Indiana	528,776	26,755	138,216	313,872	186,008	1,063,721	140,483	14,862	355,264	43,906	376,164	3,188,027	2,832,763
Iowa	864,489	128,010	451,098	419,538	579,500	2,203,416	124,432	19,638	1,154,274	241,614	737,593	6,923,602	5,769,328
Kansas	337,770	46,433	175,113	165,096	192,500	1,271,633	128,814	42,997	247,272	99,106	575,133	3,281,867	3,034,597
Kentucky	176,356	31,467	209,544	206,922		294,668	139,030	56,054	93,790	67,793	551,684	1,827,308	1,733,518
Louisiana	199,427	3,967	55,746	235,864		164,000	106,461	37,282	20,200	25,761	122,858	971,566	951,366
Maine	121,266	17,148	10,027	174,330		149,202	101,702	91,000	270,974	20,796	57,058	1,013,503	742,529
Maryland	300,572	102,705	314,047	59,955	184,000	172,433	2,733,607	137,487	181,620	15,118	40,750	4,242,294	4,060,674
Massachusetts	3,019,015	237,457	1,295,278	3,298,182	82,308	574,500	101,927	603,284	2,523,355	647,906	1,077,929	13,461,141	10,937,786
Michigan	641,296	28,745	49,043	269,660	200,000	1,733,700	138,086	175,108	230,880	92,006	771,472	4,329,996	4,099,116
Minnesota	555,185	131,595	452,265	238,260	125,250	1,777,336	129,731	167,028	184,567	95,611	536,163	4,392,991	4,208,424
Mississippi	138,850	7,232	302,688	80,836	34,000	331,996	114,276	4,401	4,192	12,091	221,219	1,251,781	1,247,589
Missouri	708,074	73,646	314,479	549,450	65,128	682,726	129,104	82,538	389,527	131,163	180,265	3,306,100	2,916,573
Montana	26,945	8,046	38,459	35,000	120,000	470,906	97,867				20,793	818,016	818,016

TABLE 26.—*Receipts of universities, colleges, and professional schools in 1917–18*—Continued.

States.	From student fees.			From productive funds.	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts, exclusive of additions to endowments.
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Nebraska..........	$298,222	$24,027	$62,419	$277,850	$448,794	$739,213	$118,576	$71,287	$26,777	$52,654	$284,785	$2,404,604	$2,377,827
Nevada..........	1,904	2,868	20,625	15,283	....	145,035	92,221	....	....	....	19,833	297,769	297,769
New Hampshire...	151,403	109,475	62,797	236,883	50,000	74,075	115,575	19,545	15,608	70,228	65,642	971,231	955,623
New Jersey..........	500,279	117,014	18,000	491,886	....	114,949	110,425	110,000	288,491	260,100	3,333	2,014,477	1,725,986
New Mexico..........	5,014	5,098	26,913	48,782	22,995	229,798	99,102	....	....	131	42,626	480,459	480,459
New York..........	3,244,719	461,984	934,017	3,483,469	123,484	2,065,061	1,708,032	460,177	1,070,354	695,408	3,410,009	17,656,714	16,586,369
North Carolina....	319,830	81,336	254,861	205,569	63,812	348,707	134,707	28,897	39,497	41,788	155,431	1,674,435	1,634,938
North Dakota.....	54,899	5,684	66,409	141,108	....	352,075	106,659	....	4,795	17,852	91,291	840,772	835,977
Ohio..........	979,108	131,646	278,874	784,860	273,082	2,504,887	135,949	274,191	630,886	236,769	346,579	6,576,831	5,945,945
Oklahoma..........	63,953	4,320	58,140	178,010	525,000	655,457	130,733	700	100,100	29,784	57,630	1,803,827	1,703,727
Oregon..........	170,468	56,474	27,848	116,700	....	788,656	131,857	2,366	105,756	40,671	84,193	1,524,989	1,419,233
Pennsylvania......	2,636,911	386,937	795,924	1,948,212	86,070	1,456,296	188,383	127,660	1,577,765	502,561	968,591	10,675,310	9,097,545
Rhode Island......	4,822	8,252	32,589	2,500	....	40,000	90,582	....	....	....	24,352	203,097	203,097
South Carolina....	174,889	24,768	428,236	77,517	55,139	428,850	151,526	42,911	17,339	24,408	56,134	1,481,717	1,464,378
South Dakota.....	96,098	18,317	33,556	129,706	426,861	398,250	106,445	....	41,798	50,668	82,705	1,384,404	1,342,606
Tennessee..........	354,511	38,902	246,924	352,493	1,000,000	129,585	134,536	50,568	490,027	165,661	185,561	3,148,768	2,658,741
Texas..........	434,866	119,315	602,793	825,221	405,150	1,460,818	173,415	53,226	25,685	97,243	734,403	4,932,135	4,906,450
Utah..........	35,784	....	....	....	72,253	405,455	96,498	....	....	....	87,800	697,790	697,790
Vermont..........	124,049	26,755	93,666	84,312	....	116,080	100,063	....	58,465	3,061	63,539	669,990	611,525
Virginia..........	651,262	169,679	672,681	378,882	19,166	378,833	124,725	116,000	145,554	90,672	231,552	2,979,006	2,833,452
Washington.......	236,402	17,430	100,501	123,027	69,017	1,037,914	107,393	....	200	656	110,577	1,803,117	1,802,917
West Virginia.....	69,214	16,854	42,060	25,622	93,500	413,357	112,191	....	51,973	2,609	30,258	857,638	805,665
Wisconsin..........	603,391	59,350	339,669	240,782	150,569	1,642,494	135,017	38,863	443,985	77,260	405,529	4,136,909	3,692,925
Wyoming..........	6,992	....	23,203	22,773	31,483	121,404	93,331	....	....	960	28,641	328,787	328,787
Outlying possessions:													
Hawaii..........	112	....	....	....	11,363	22,593	50,000	....	....	....	5,027	89,095	89,095
Porto Rico....	1,273	....	....	1,865	142	50,000	50,000	....	829	....	2,485	106,094	105,765

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18.*

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.[1]		Students.		Total students.[1]		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
ALABAMA.																					
Auburn	Alabama Polytechnic Institute	Coed	State	1872			67	0			780	12			98	3			8	0	
	Arts and sciences				13	0			94	12			5	3							
	Graduate								9	0							4	0			
	Special [2]								45	1											
	Chemical engineering				7	0			24	1			2	0			0	0			
	Civil engineering				3	0			52	0			5	0			1	0			
	Electrical engineering				5	0			179	0			22	0			1	0			
	Mechanical engineering				10	0			217	0			10	0			2	0			
	Mining engineering				2	0			6	0			2	0			0	0			
	Agriculture				21	0			350	1			28	0			0	0			
	Architecture				2	0			18	0			1	0			0	0			
	Forestry				1	0			15	0			0	0			0	0			
	Education				2	0			122	6			0	0			0	0			
	Veterinary medicine				7	0			44	0			17	0			0	0			
	Pharmacy				2	0			20	0			6	0			0	0			
	Summer school (1917)				36	14			200	348											
	Military drill								638	0											
Birmingham	Birmingham-Southern College	Coed	M. E. So.	1897			14	0			305	23			15	4			0	1	4
	Preparatory				4	0			138	8			0	0			0	0			
	Arts and sciences				10	0			167	15			15	4			0	1			
	Education				1	0			15	6											
	Military drill								156	0											
Do	Howard College	Coed	Bapt.	1841			13	4			123	39			14	5			0	0	5
	Arts and sciences				13	4			114	36			14	5			0	0			
	Graduate								0	1											
	Special								9	2			0	0			0	0			
	Summer school (1917)				6	5			18	120											

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[1] Excluding duplicates, and those in summer school, short winter course, extension courses, and correspondence courses.

[2] Includes students in music, art, oratory, business, etc., unless they are enrolled in four-year courses leading to a collegiate degree.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
ALABAMA—contd.																					
Marion	Judson College	Women	Bapt.	1839			5	23			2	238			0	11					
	Preparatory					4			0	71			0	0			0	0			
	Arts and sciences				3	9			0	122			0	11			0	0			
	Graduate								0	3											
	Special				2	10			2	42			0	0			0	0			
Do	Marion Institute	Men	Nonsect.				19	0			473	0			5	0			0	0	
	Preparatory				14	0			413	0			0	0			0	0			
	Arts and sciences				5	0			60	0			5	0			0	0			
	Summer school (1917)				5	0			38	0											
	Military drill								473	0											
Montevallo	Alabama Girls' Technical Institute	Women	State	1896			3	33			0	491									
	Preparatory				0	5			0	125											
	Arts and sciences				2	7			0	366											
	Agriculture				1	0			0	60											
	Commerce				0	2			0	50											
	Education				0	3			0	149											
	Home economics				0	7			0	218											
	Fine arts				0	2			0	140											
	Music				0	7			0	135											
	Summer school (1917)				5	20			0	296											
	Extension courses				1	5			0	124											
Montgomery	Woman's College of Alabama	Women	M. E. So.	1910			6	20			0	275			0	32					
	Arts and sciences				6	20			0	207			0	32							
	Special								0	68											
	Education								0	26											
	Home economics								0	23											
	Fine arts								0	15											

St. Bernard	St. Bernard College	Men	R. C.	1892			24	0			142	0			3	0					
	Preparatory				24	0			111	0											
	Arts and sciences				24	0			16	0											
	Commercial								27	0			3	0							
	Theology								5	0											
Spring Hill	Spring Hill College	Men	R. C.	1830			23	0			220	0			11	0					1
	Preparatory				8	0			160	0											
	Arts and sciences				12	0			60	0			11	0							
	Fine arts				1	0			25	0											
	Music				2	0			60	0											
Talladega	Talladega College (colored)	Coed	A. M. A.	1869			12	15			178	183			10	3					
	Preparatory				6	13			123	149											
	Arts and sciences				7	8			45	28			3	3							
	Music				1	2			16	91											
	Theology				6	0			10	0			7	0							
University	University of Alabama	Coed	State	1831			81	1			676	141			76	24			1	0	5
	Arts and sciences				30	0			423	130			43	24							
	Graduate								8	0							1	0			
	Special								8	4											
	Chemical engineering				2	0			28	0			2	0							
	Civil engineering				1	0			23	0			0	0							
	Electrical engineering				1	0			42	0			0	0							
	Mechanical engineering				1	0			20	0			0	0							
	Mining engineering				1	0			2	0			0	0							
	Education				13	0			126	62			6	0							
	Home economics				0	1			0	44											
	Music				1	0			36	34											
	Law				3	0			64	1			14	0							
	Medicine				23	0			51	0			9	0							
	Pharmacy				5	0			4	2			2	0							
	Summer school (1917)				30	14			234	556											
	Extension courses				2	0			23	46											
	Military drill								340	0											
ARIZONA.																					
Tucson	University of Arizona	Coed	State	1891			52	12			232	243			21	13			2	2	3
	Arts and sciences				26	12			77	189			8	13							
	Graduate								10	20							2	2			
	Special								8	27											
	Architectural engineering				1	0			2	0											
	Civil engineering				2	0			10	0			1	0							
	Electrical engineering				1	0			17	0			2	0							
	Mechanical engineering				3	0			16	0			1	0							
	Mining engineering				3	0			51	0			0	0							
	Agriculture				12	0			26	4			7	0							
	Law				4	0			11	0			2	0							
	Short winter course								121	137											
	Correspondence courses								10	10											
	Military drill								145	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
ARKANSAS.																					
Arkadelphia	Henderson-Brown College	Coed	M. E. So.	1890			5	16			214	189			6	4					1
	Preparatory				1	4			59	33											
	Arts and sciences				3	4			98	49			6	4							
	Special				1	6			24	98											
	Commerce				0	1			19	26											
	Home economics				0	1			0	13											
	Music								14	85											
Do	Ouachita College	Coed	Bapt.	1886			9	4			117	148			8	10					
	Arts and sciences				9	4			117	148			8	10							
Clarksville	Arkansas Cumberland College	Coed	Presb.	1891			3	5			36	34			3	1					1
	Preparatory				1	3			28	22											
	Arts and sciences				2	2			8	12			3	1							
Conway	Central Baptist College	Women	Bapt.	1892			3	14			0	147	0	15							
	Preparatory				0	3			0	34											
	Arts and sciences				2	5			0	82			0	8							
	Special								0	31											
	Education				1	0			0	28											
	Home economics				0	1			0	32											
	Fine arts				0	1			0	10											
	Music				1	4			0	123			0	7							
Do	Hendrix College	Coed	M. E. So.	1884			12	0			218	34			7	4					
	Preparatory				4	0			94	8											
	Arts and sciences				8	0			124	26			7	4							
Eureka Springs	Crescent College[1]	Women	Nonsect.				2	12			0	100									
	Preparatory				0	3			0	32											
	Arts and sciences				1	7			0	39											
	Special				0	7			0	29											
	Fine arts				0	1			0	10											
	Music				1	3			0	52											

Fayetteville	University of Arkansas	Coed	State	1872			115	20			365	289			44	15					2
	Preparatory				4	3			34	42											
	Arts and sciences				22	5			128	110			10	15							
	Graduate				8	0			1	3											
	Special								17	16											
	General engineering				7	0			44	0											
	Chemical engineering				3	0			9	0											
	Civil engineering				2	0			30	0			2	0							
	Electrical engineering				3	0			9	0			4	0							
	Mechanical engineering				5	0			19	0											
	Mining engineering				1	0			1	0											
	Agriculture				19	0			45	0			7	0							
	Education				4	3			15	137											
	Home economics				0	5			0	36											
	Fine arts				0	3			0	1											
	Music				3	1			1	6											
	Medicine				56	0			52	0			21	0							
	Summer school (1917)				16	4			42	160											
	Short winter course				4	0			139	0											
	Correspondence courses				28	6			30	35											
	Military drill								202	0											
Little Rock	Arkansas Law School	Coed	Nonsect.	1916			6	0			15	5			4	0					
	Law				6	0			15	5			4	0							
Do.	St. John's Diocesan Seminary	Men.	R. C.				5	0			12	0			3	0					
	Theology				5	0			12	0			3	0							
CALIFORNIA.																					
Bakersfield	Junior College	Coed	City				8	2			0	16									
	Arts and sciences				8	2			0	16											
Berkeley	Berkeley Baptist Divinity School	Coed	Bapt.	1890			5	0			10	2			1	0					
	Theology				5	0			10	2			1	0							
Do.	Pacific Unitarian School for the Ministry	Coed	Unitar	1905			5	1			11	4			2	0					
	Theology				5	1			11	4			2	0							
Do.	University of California	Coed	State	1869			514	40			3,438	3,811			359	422			65	68	14
	Arts and sciences				184	25			1,398	3,109			156	420							
	Graduate								238	510							59	68			
	Chemical engineering				15	0			153	9			12	0							
	Civil engineering				11	0			118	0			17	0							
	Electrical engineering				4	0			([2])	0			10	0							
	Mechanical engineering				11	0			240	0			6	0							
	Mining engineering				9	0			110	0			5	0			2	0			
	Agriculture				115	2			355	28			48	2							
	Architecture				8	0			42	19			6	0							
	Forestry				7	0			30	0			0	0							
	Commerce				20	2			281	90			17	0							
	Education				6	0			87	263			0	0			1	0			
	Home economics				0	6			0	83			0	0							
	Law				24	0			117	20			6	0			3	0			
	Medicine				75	4			181	21			[3] 11	0							
	Dentistry				22	1			159	7			42	0							
	Pharmacy				3	0			82	5			23	0							

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[1] Junior college.

[2] Included in mechanical engineering.

[3] Hahnemann Medical College of the Pacific.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
CALIFORNIA—con.																					
Berkeley	University of California—Continued.																				
	Summer school (1917)				132	32			868	3,111											
	Extension courses				(104)				(8,420)												
	Correspondence courses				(64)				(2,456)												
	Military drill								1,439	0											
Claremont	Pomona College	Coed	Nonsect.	1888			37	8			190	358			17	52			1	0	1
	Arts and sciences				37	8			185	332			17	52							
	Graduate								3	6							1	0			
	Special								2	20											
	Military drill								155	0											
Fresno	Fresno Junior College	Coed	City				13	2			24	73									
	Arts and sciences				13	2			22	69											
	Special								2	4											
	Military drill								18	0											
Fullerton	Fullerton Junior College	Coed	City				7	7			5	53									
	Arts and sciences				7	7			4	34											
	Special				2	2			1	19											
Los Angeles	Occidental College	Coed	Nonsect.	1887			20	4			128	170			22	28					1
	Arts and sciences				20	4			122	168			22	28							
	Graduate								1	0											
	Special								5	2											
	Military drill								100	0											
Los Angeles	University of Southern California	Coed	M. E.	1880			330	46			1,595	1,842			232	121			13	18	
	Preparatory				2	0			60	81											
	Arts and sciences				63	24			484	836			44	93							
	Graduate				30	7			109	199								13	18		
	Special				19	23			96	451											
	Chemical engineering				3	0			26	4			1	0							
	Civil engineering				2	0			50	0			3	0							
	Electrical engineering				3	0			30	0			3	0							

	Mechanical engineering				2	0			10	0											
	Architecture				3	0			6	0											
	Journalism				4	0			12	20											
	Education				21	9			21	59											
	Fine arts				9	8			5	18											
	Music				10	9			53	231			0	9							
	Theology				13	0			26	1			5	0							
	Law				31	2			296	56			57	12							
	Medicine				102	2			93	21			25	3							
	Dentistry				49	2			216	3			71	1							
	Pharmacy				20	0			52	8			23	3							
	Summer school (1917)				22	3			402	807											
	Military drill								371	0											
Menlo Park	St. Patrick's Seminary	Men	R. C.				16	0			148	0									
	Arts and sciences				7	0			70	0											
	Graduate				6	0			30	0											
	Theology				6	0			48	0											
Mills College	Mills College	Women	Nonsect.	1865			11	30			0	279			0	22					
	Arts and sciences				6	27			0	254			0	22							
	Special				5	3			0	25											
	Home economics				0	2			0	25											
	Fine arts				2	2			0	15											
	Music				4	5			0	25											
Oakland	St. Mary's College	Men	R. C.	1863			32	0			160	0			6	0					
	Preparatory				7	0			60	0											
	Arts and sciences				4	0			15	0			6	0							
	Special				1	0			5	0											
	Civil engineering				8	0			25	0											
	Architecture				3	0			10	0											
	Commerce				3	0			15	0											
	Journalism				2	0			10	0											
	Education				4	0			14	0											
	Music				1	0			8	0											
	Law				3	0			12	0											
Pasadena	Throop College of Technology	Men	Nonsect.	1891			35	0			193	0			17	0			2	0	
	Graduate								4	0							2	0			
	Special								4	0											
	General engineering				35	0			27	0			3	0							
	Chemical engineering				35	0			46	0			0	0							
	Civil engineering				35	0			28	0			6	0							
	Electrical engineering				35	0			62	0			7	0							
	Mechanical engineering				35	0			22	0			1	0							
	Military drill								126	0											
Redlands	University of Redlands	Coed	Bapt.				11	7			65	117			7	17					1
	Arts and sciences				9	3			56	91			7	9							
	Special								7	21											
	Fine arts				0	1			1	2											
	Music				2	3			1	3			0	8							
Sacramento	Sacramento Junior College	Coed	City				4	7			9	52									
	Arts and sciences				4	7			5	21											
	Special								4	31											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
CALIFORNIA—contd.																					
San Anselmo	San Francisco Theological Seminary	Coed	Presb	1871			9	0			43	5			9	0					
	Theology				9	0			43	5			9	0							
San Jose	College of the Pacific	Coed	M. E	1851			17	17			141	247			6	8					
	Preparatory				1	5			39	44											
	Arts and sciences				10	4			84	150			6	4							
	Fine arts				0	2			1	0											
	Music				6	6			17	53			0	4							
	Military drill								50	0											
San Luis Obispo	San Luis Obispo Junior College	Coed	City				4	4			4	4									
	Arts and sciences				4	4			3	4											
	Special								1	0											
	Military drill								4	0											
Santa Ana	Sanita Ana Junior College	Coed	City				3	5			17	45									
	Arts and sciences				3	5			17	45											
	Military drill								17	0											
Santa Clara	University of Santa Clara	Men	R. C	1851			38	0			291	0			16	0					
	Preparatory				14	0			167	0			0	0							
	Arts and sciences				16	0			95	0			9	0							
	General engineering				6	0			8	0			0	0							
	Civil engineering				5	0			5	0			0	0							
	Electrical engineering				5	0			10	0			2	0							
	Mechanical engineering				5	0			10	0			1	0							
	Law				9	0			30	0			4	0							
Stanford University	Leland Stanford Junior University	Coed	Nonsect	1891			221	13			1,184	579			133	47			19	24	
	Arts and Sciences				105	11			579	478			85	43							
	Graduate								63	82							13	24			
	Chemical engineering				10	0			75	0			7	0							
	Civil engineering				5	0			74	0			10	0							
	Electrical engineering				4	0			7	0			0	0							

	Mechanical engineering				11	0			136	0			14	0							
	Mining engineering				6	0			60	0			10	0							
	Law				9	0			107	5			2	0			6	0			
	Medicine				73	3			83	14			5	2							
	Summer school (1917)				92	8			199	167											
	Military drill								550	0											
Whittier	Whittier College	Coed	Friends	1901			10	4			78	80			4	8					
	Arts and sciences				6	4			66	62			4	8							
	Graduate								1	1											
	Special				4	0			11	17											
COLORADO.																					
Boulder	University of Colorado	Coed	State	1877			180	27			789	504			88	67			7	3	
	Arts and sciences				56	20			327	463			29	64							
	Graduate				65	5			45	22							5	3			
	General engineering				13	0			124	0											
	Chemical engineering				3	0			42	0			2	0							
	Civil engineering				7	0			33	2			9	0							
	Electrical engineering				6	0			62	1			19	0							
	Mechanical engineering				6	0			31	0			9	0							
	Law				16	0			39	2			10	0							
	Medicine				60	0			74	5			6	2			2	0			
	Pharmacy				11	2			12	9			4	1							
	Summer school (1917)				68	8			147	624											
	Extension courses				22	8			(2128)												
	Military drill								490	0											
Colorado Springs	Colorado College	Coed	Nonsect.	1874			32	15			229	370			24	49					
	Arts and sciences				23	14			140	290			15	49							
	Graduate								0	1											
	Special								4	37											
	Chemical engineering				4	0			1	0			0	0							
	Civil engineering				4	0			12	0			1	0							
	Electrical engineering				4	0			23	0			0	0							
	Business				3	0			46	2			8	0							
	Music				2	1			7	62											
	Military drill								209	0											
Denver	College of the Sacred Heart	Men	R. C.	1888			22	0			252	0			2	0					
	Preparatory				15	0			236	0											
	Arts and sciences				7	0			16	0			2	0							
Do	Colorado Woman's College	Women	Bapt.	1909			2	11			0	135			0	2					
	Preparatory				0	3			0	47											
	Arts and sciences				1	4			0	48											
	Special				0	4			0	40											
	Music				1	5			0	56			0	2							
Do	Iliff School of Theology	Coed	M. E.				6	0			53	9			8	0					
	Theology				6	0			53	9			8	0							
Fort Collins	Colorado Agricultural College	Coed	State	1881			81	31			549	307			41	24					
	Preparatory				26	13			256	97											
	General science								0	6											
	Special				5	4			43	132											
	General engineering				1	3			42	0											
	Civil engineering				2	0			9	0			6	0							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
CONNECTICUT—con.																					
Storrs	Connecticut Agricultural College	Coed	State	1881			20	5			161	31			11	0					
	Agriculture (noncollegiate)								49	0											
	Home economics (noncollegiate)								0	6											
	Agriculture				20	2			112	0			11	0							
	Home economics				0	3			0	25											
	Military drill								161	0											
DELAWARE.																					
Newark	Delaware College	Coed	State	1834			41	9			216	120			32	30			1	0	2
	Arts and sciences				21	4			73	49			9	13			1	0			
	Special								0	3											
	General engineering								11	0											
	Chemical engineering				2	0			24	0			2	0							
	Civil engineering				2	0			17	0			6	0							
	Electrical engineering				2	0			24	0			4	0							
	Mechanical engineering				2	0			18	0			3	0							
	Agriculture				11	0			49	2			8	1							
	Education				1	2			0	30			0	7							
	Home economics				0	3			0	36			0	9							
	Summer school (1917)				15	5			25	256											
	Military drill								157	0											
DIST. COLUMBIA.																					
Washington	American University	Coed	M. E.				8	0			32	9							5	0	1
	Graduate				8	0			32	9							5	0			
Do	Catholic Sisters College	Women	R. C.	1911			33	6			0	204			0	39			0	22	
	Arts and sciences				33	6			0	80			0	39							
	Graduate								0	22							0	22			
	Education								0	102											
	Summer school (1917)				25	2			0	802											

Do.	Catholic University of America	Men	R. C.	1889			86	0			436	0			66	0			58	0	
	Arts and sciences				86	0			308	0			24	0							
	Graduate								128	0							40	0			
	Chemical engineering								29	0			3	0							
	Civil engineering								21	0			5	0							
	Electrical engineering								22	0			2	0							
	Mechanical engineering								10	0			0	0							
	Architecture								7	0			4	0							
	Education				3	0			57	0			0	0							
	Theology				12	0			52	0			12	0			17	0			
	Law				9	0			55	0			16	0			1	0			
Do.	Gallaudet College	Coed	Nat'l.	1864			11	5			60	53			6	11			2	0	1
	Preparatory				1	0			18	18											
	Arts and sciences				10	5			39	31			6	11							
	Graduate								2	0							2	0			
	Special								2	4											
Do.	Georgetown University	Men	R. C.	1789			152	0			1,082	0			390	0					2
	Arts and sciences				50	0			300	0			35	0							
	Graduate				10	0			5	0											
	Law				55	0			700	0			300	0							
	Medicine				25	0			71	0			30	0							
	Dentistry				12	0			80	0			25	0							
	Military drill								300	0											
Do.	George Washington University	Coed	Nonsect.	1821			214	3			1,398	811			100	25			16	7	9
	Arts and sciences				30	1			310	554			16	19							
	Graduate				43	1			105	40							16	7			
	General engineering				26	0			385	6			0	2							
	Chemical engineering				9	0			103	5			4	0							
	Civil engineering				4	0			63	0			2	0							
	Electrical engineering				3	0			42	0			2	0							
	Mechanical engineering				4	0			55	0			1	0							
	Architecture				8	0			13	1											
	Education				24	2			12	169											
	Law				16	0			278	25			31	2							
	Medicine				98	0			104	5			9	1							
	Veterinary medicine				21	0			57	0			12	0							
	Dentistry				32	0			147	5			16	1							
	Pharmacy				9	0			19	1			7	0							
	Summer school (1917)				19	1			115	98											
Do.	Howard University (colored)	Coed	Nat'l.	1867			112	19			1,095	396			147	31					
	Preparatory				12	9			213	66											
	Arts and sciences				24	2			247	88			32	16							
	Special				13	7			184	119											
	Engineering				5	0			16	0											
	Education				9	1			33	81			7	14							
	Home economics				0	3			0	29											
	Theology				6	0			50	1			6	0							
	Law				11	0			68	4			19	0							
	Medicine				36	0			112	2			24	0							
	Dentistry				20	0			149	3			51	1							
	Pharmacy				7	0			33	3			8	0							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
DIST. COLUMBIA—continued.																					
Washington	National University Law School	Coed	Nonsect.	1869			25	0			175	25			40	0			28	0	
	Law				25	0			175	25			40	0			28	0			
Do.	Trinity College	Women	R. C.				10	25			0	303			0	51			0	1	
	Arts and sciences				10	25			0	300			0	51							
	Graduate								0	3							0	1			
Do.	Washington College of Law	Coed	Nonsect.	1896			23	13			86	65			19	8			0	1	
	Law				23	13			86	65			19	8			0	1			
FLORIDA.																					
De Land	John B. Stetson University	Coed	Bapt.	1887			20	12			172	243			6	11			0	5	
	Preparatory				20	12			66	98											
	Arts and sciences				20	12			86	120			6	11							
	Graduate								12	11							0	5			
	Special								8	14											
Gainesville	University of Florida	Men	State	1884			62	0			347	0			28	0			2	0	
	Arts and sciences				16	0			92	0			7	0							
	Graduate								5	0							2	0			
	General engineering				13	0			42	0											
	Chemical engineering				2	0			5	0											
	Civil engineering				2	0			5	0											
	Electrical engineering				2	0			11	0			1	0							
	Mechanical engineering				3	0			4	0											
	Agriculture				23	0			89	0			6	0							
	Education				17	0			48	0			1	0							
	Law				4	0			46	0			13	0							
	Summer school (1917)				18	8			139	294											
	Short winter course				23	0			159	0											
	Correspondence courses				12	0			122	0											
	Military drill								192	0											

Tallahassee	Florida State College for Women	Women	State	1905			13	27			0	486			0	34			0	1	
	Preparatory				2	3			0	51											
	Arts and sciences				9	5			0	235			0	33							
	Graduate								0	1							0	1			
	Special				1	3			0	78											
	Commerce				0	1			0	12											
	Education				4	6			0	143											
	Home economics				0	4			0	48											
	Music				0	8			0	15			0	1							
	Summer school (1917)				10	10			14	419											
	Short winter course								0	84											
Winter Park	Rollins College	Coed	Nonsect.	1885			7	16			81	183			2	6					
	Preparatory				0	4			33	32											
	Arts and sciences				6	2			14	32			2	6							
	Special				1	0			34	119											
	Home economics				0	1			0	9											
	Fine arts				0	2			2	15											
	Music				0	7			16	69											
GEORGIA.																					
Athens	University of Georgia	Men	State	1801			82	0			764	6			71	0			6	1	4
	Arts and sciences				34	0			278	0			34	0							
	Graduate				8	0			14	6							3	1			
	Special								130	0											
	Civil engineering				2	0			26	0			1	0							
	Electrical engineering				1	0			3	0			1	0							
	Agriculture				21	0			147	0			8	0			3	0			
	Forestry				1	0			4	0											
	Commerce				4	0			64	0			4	0							
	Education				3	0			9	0											
	Law				3	0			70	0			21	0							
	Veterinary medicine				3	0			8	0											
	Pharmacy				2	0			16	0			2	0							
	Summer school (1917)				73	27			243	794											
	Military drill								450	0											
Atlanta	Atlanta University (colored)	Coed	Nonsect.	1869			8	17			191	365			3	5					1
	Preparatory				7	11			148	316											
	Arts and sciences				6	5			43	14			3	5							
	Education				4	6			0	35											
Do.	Gammon Theological Seminary (colored)	Coed	M. E.	1883			6	0			100	14			5	0					
	Theology				6	0			100	14			5	0							
Do.	Georgia School of Technology	Men	State	1888			68	0			891	0			71	0					
	Chemical engineering				12	0			46	0			4	0							
	Civil engineering				10	0			70	0			7	0							
	Electrical engineering				10	0			261	0			17	0							
	Mechanical engineering				11	0			250	0			30	0							
	Textile engineering				11	0			61	0			3	0							
	Architecture				8	0			45	0			4	0							
	Commerce				9	0			158	0			6	0							
	Summer school (1917)				7	0			112	0											
	Military drill								833	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
GEORGIA—contd.																					
Atlanta	Morehouse College (colored)	Men	Bapt.				16	6			441	0			9	0					2
	Preparatory				12	5			318	0											
	Arts and sciences				11	1			67	0			8	0							
	Theology				3	0			56	0			1	0							
Do	Morris Brown College (colored)	Coed	A. M. E.	1885			9	3			108	5			5	0					3
	Preparatory				9	3			91	2											
	Arts and sciences				9	8			17	3			3	0							
	Theology				3	0			31	2			2	0							
College Park	Cox College	Women	Nonsect.	1843			3	21			0	156			0	14					
	Preparatory				0	3			0	50											
	Arts and sciences				0	15			0	100			0	1							
	Special				2	8			0	75											
	Education				1	1			0	4											
	Home economics				0	2			0	12			0	2							
	Fine arts				0	1			0	35			0	0							
	Music				2	3			0	75			0	9							
	Expression								0	11			0	2							
Dahlonega	North Georgia Agriculture College	Coed	State	1872			12	3			383	19			7	2					
	Preparatory				2	3			222	13											
	Arts and sciences				10	0			161	6			5	2							
	Agriculture				2	0			40	0			2	0							
	Commerce				1	1			70	10											
	Military drill								376	0											
Decatur	Agnes Scott College	Women	Nonsect.	1890			8	26			0	365			0	32					
	Arts and sciences				6	23			0	361			0	32							
	Graduate								0	4											
	Fine arts				0	2			0	15											
	Music				3	1			0	75											

Gainesville	Brenau College	Women	Nonsect.	1878			15	15			0	420			0	26					
	Arts and sciences				15	15			0	231			0	16							
	Special								0	69											
	Music								0	139			0	10							
	Summer school (1917)								0	67											
Lagrange	Lagrange Female College	Women	M. E. So.	1833			2	18			0	319			0	4					
	Preparatory				0	3			0	47											
	Arts and sciences				1	6			0	97			0	4							
	Special				1	9			0	175											
	Home economics								0	20											
	Fine arts								0	37											
	Expression								0	18											
	Music								0	100											
Do	Southern Female College	Women					4	13			0	120			0	9					
	Preparatory				0	8			0	60											
	Arts and sciences				2	8			0	60			0	8							
	Commerce				1	3			0	60											
	Education				0	2			0	6											
	Home economics				0	1			0	5											
	Fine arts				0	1			0	30											
	Music				1	2			0	32			0	1							
	Summer school (1917)				0	5			0	35											
Macon	Mercer University	Men	Bapt.	1837			33	0			423	0			19	0			9	0	
	Arts and sciences				22	0			384	0			19	0			9	0			
	Special								13	0											
	Commerce				5	0			26	0											
	Law				6	0			41	0											
	Summer school (1917)				12	0			61	20											
	Military drill								240	0											
Do	Wesleyan College	Women	M. E. So.	1839			10	20			0	306			0	53					
	Arts and sciences				7	8			0	306			0	38							
	Special				3	12			0	211											
	Journalism								0	10											
	Education				0				0	70											
	Home economics								0	69											
	Fine arts								0	38											
	Music								0	275			0	15							
Oglethorpe	Oglethorpe University	Men	Presb.	1916			11	0			105	1									
	Arts and sciences				11	0			105	1											
Oxford	Emory University	Men	M. E. So.	1836			143	0			509	0			57	0			3	0	1
	Preparatory				5	0			57	0											
	Arts and sciences				18	0			188	0			22	0			3	0			
	Special								9	0											
	Theology				9	0			111	0			6	0							
	Law				7	0			10	0			2	0							
	Medicine				104	0			134	0			27	0							
	Military drill								138	0											
Rome	Shorter College	Women	Bapt.	1877			5	20			0	272			0	21					
	Arts and sciences				3	12			0	164			0	17							
	Special								0	48											
	Expression					1			0	19											
	Fine arts				0	1			0	13											
	Music				2	5			0	49			0	4							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
GEORGIA—contd.																					
South Atlanta	Clark University (colored)	Coed	M. E.	1870			6	9			61	206			3	3					
	Preparatory				6	4			47	137											
	Arts and sciences				6	2			14	16			3	3							
	Home economics				0	4			0	53											
HAWAII.																					
Honolulu	College of Hawaii	Coed	Territo'l	1907			15	8			65	75			8	1					1
	Arts and sciences				15	8			45	14			3	1							
	Graduate								0	2											
	Special								20	59											
	Civil engineering								15	1			1	0							
	Sugar technology								19	0			2	0							
	Agriculture								5	0			2	0							
	Home economics								0	9											
IDAHO.																					
Caldwell	College of Idaho	Coed	Presb	1891			9	5			58	146			8	13					
	Preparatory				2	2			13	11											
	Arts and sciences				6	4			38	96			8	13							
	Education				4	1			8	60											
	Home economics				0	1			0	21											
	Music				2	1			12	70											
Moscow	University of Idaho	Coed	State	1892			77	20			267	173			17	26			2	0	
	Arts and sciences				35	16			103	131			6	17							
	Graduate								6	7							1	0			
	Special								0	25											
	Chemical engineering				4	0			10	0			2	0							
	Civil engineering				2	0			13	0											
	Electrical engineering				2	0			14	0			4	0							
	Mechanical engineering				2	0			15	0											

	Mining engineering				2	0			14	0			1	0			1	0			
	Agriculture				22	0			63	0			4	0							
	Forestry				3	0			10	0											
	Education				2	0			2	7											
	Home economics				0	4			0	42			0	9							
	Music				2	2			0	21											
	Law				3	0			25	0											
	Short winter courses				32	8			70	10											
	Correspondence courses				2	0			34	0											
	Military drill								218	0											
Pocatello	Idaho Technical Institute[1]	Coed	State				14	8			125	96									
	Preparatory				14	8			112	61											
	Arts and sciences				14	8			13	35											
	Special								5	26											
	Short winter courses				14	8			20	4											
	Military drill								50	0											
ILLINOIS.																					
Abingdon	Hedding College	Coed	M. E.	1856			7	9			79	113			3	9					2
	Preparatory				1	3			19	23											
	Arts and sciences				5	2			59	41			3	5							
	Public speaking				0	1			2	19			0	2							
	Music				1	3			1	50			0	2							
	Military drill								50	0											
Aurora	Aurora College	Coed	Christ				15	6			38	42			3	6					1
	Preparatory				5	0			15	5											
	Arts and sciences				10	2			21	34			3	6							
	Music				3	4			3	7											
	Theology				5	0			12	1											
Bloomington	Illinois Wesleyan University	Coed	M. E.	1850			26	16			220	290			19	18			3	0	1
	Preparatory				0	3			9	5											
	Arts and sciences				12	5			132	148			7	18							
	Graduate								2	2							3	0			
	Fine arts				0	1			1	18											
	Music				5	7			43	132											
	Law				9	0			51	3			9	0							
Bourbonnais	St. Viator College	Men	R. C.	1868			20	0			242	0			6	0					
	Preparatory				20	0			183	0											
	Arts and sciences				13	0			56	0			6	0							
	Special								3	0											
	Military drill								230	0											
Carlinville	Blackburn College[1]	Coed	Presb.	1859			6	5			57	59									2
	Preparatory				3	2			36	25											
	Arts and sciences				3	3			21	34											
Carthage	Carthage College	Coed	Luth.	1872			12	10			96	131			8	11					4
	Preparatory				3	4			36	27											
	Arts and sciences				9	3			59	86			8	11			2	0			
	Special				0	3			1	18											
	Military drill								59	0											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
ILLINOIS—contd.																					
Chicago	Armour Institute of Technology	Men	Nonsect.	1893			59	0			472	0			42	0			9	0	
	Chemical engineering				6	0			80	0			5	0			1	0			
	Civil engineering				5	0			69	0			6	0			3	0			
	Electrical engineering				7	0			102	0			13	0			1	0			
	Mechanical engineering				21	0			95	0			7	0			3	0			
	Fire protection engineering				2	0			34	0			6	0			1	0			
	Architecture				6	0			89	0			5	0							
	Summer school (1917)				12	0			112	0											
	Military drill								400	0											
Do	Bethany Bible School	Coed	Breth	1905			13	5			158	172			7	4			1	0	
	Theology				11	3			39	22			7	4			1	0			
	Bible teachers' training school				13	5			38	79											
	Special								81	71											
Do	Central States College of Pharmacy	Coed	Nonsect.	1908			5	1			70	6			13	1					
	Pharmacy				5	1			70	6			13	1							
Do	Chicago-Kent Law School	Coed	Nonsect.	1888			32	0			499	20			105	6			12	1	
	Law				32	0			499	20			105	6			12	1			
Do	Chicago Theological Seminary	Coed	Cong	1858			9	0			61	3			10	0					
	Theology				9	0			61	3			10	0							
	Summer school				8	0			22	1											
	Correspondence courses								38	0											
Do	Chicago Veterinary College	Men	Nonsect.	1883			14	0			190	0			118	0					
	Veterinary medicine				14	0			190	0			118	0							
Do. (Maywood).	Evangelical Lutheran Theological Seminary	Men	Ev. Luth	1870			7	0			55	0			3	0					
	Theology				7	0			55	0			3	0							
	Correspondence courses				6	0			93	0											
Do	Hahnemann Medical College	Coed	Nonsect.	1859			76	8			46	3			13	1					
	Medicine				76	8			46	3			13	1							

Do.	Hamilton College of Law	Coed	Nonsect.	1910			30	0			85	2			42	0					
	Law				30	0			85	2			42	0							
	Extension courses				30	0			2,500	24											
Do.	Lewis Institute	Coed	Nonsect.	1896			23	17			1,322	885			11	22					
	Preparatory				11	7			232	58											
	Arts and sciences				12	10			205	150			11	22							
	Evening courses				21	19			885	677											
	Summer school (1917)				7	9			149	111											
Do.	Loyola University	Men	R. C.	1869			223	0			701	15			179	13			0	1	
	Arts and sciences				21	0			176	0			8	7			0	1			
	Law				17	0			75	0			16	0							
	Medicine				185	0			450	15			155	6							
	Extension courses (sociology)				15	8			32	547											
Do.	McCormick Theological Seminary	Men	Presb.	1833			16	0			190	0			16	0					
	Theology				16	0			190	0			16	0							
Do.	University of Chicago	Coed	Nonsect.	1892			263	81			4,139	4,893			305	377			227	77	
	Preparatory				26	17			236	232											
	Arts and sciences				248	43			1,937	2,529			217	281							
	Graduate								1,462	1,063							203	75			
	Commerce				49	0			188	94											
	Education				53	35			127	1,219			17	92							
	Theology				36	0			368	51			13	0							
	Law				8	0			230	20			19	1			24	2			
	Medicine				73	6			505	45			39	3							
	Summer school (1917)								2,151	2,482											
	Military drill								200	0											
Do.	Western Theological Seminary	Men	P. E.	1885			5	0			29	0									
	Theology				5	0			11	0											
	Graduate								18	0											
Decatur	James Millikin University	Coed	Presb.	1903			33	29			283	623			8	26					1
	Preparatory				3	3			24	37											
	Arts and sciences				19	15			155	215			8	25							
	Graduate								1	10											
	Special				15	18			37	63											
	Music				6	12			66	530			0	1							
	Military drill								150	0											
Eureka	Eureka College	Coed	Christ.	1848			17	8			107	151			5	10					
	Preparatory				2	8			22	22											
	Arts and sciences				12	5			63	80			5	10							
	Fine arts				0	1			5	15											
	Music				3	2			39	92											
	Theology				2	0			27	16											
Evanston	Garrett Biblical Institute	Coed	M. E.	1854			13	0			216	25			38	1					
	Theology				13	0			55	5			38	1							
	Graduate				13	0			161	20											
	Military drill								75	0											
Do.	Northwestern University	Coed	M. E.	1855			411	35			2,476	1,534			316	145			19	11	4
	Arts and sciences				105	5			464	808			61	126							
	Graduate								63	48							18	11			
	General engineering				20	0			86	0			2	0							
	Commerce				29	0			844	107			1	0							
	Music				19	19			43	405			0	11							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
ILLINOIS—contd.																					
Evanston	Northwestern University—Continued.																				
	Oratory				2	11			7	138											
	Law				21	0			215	19			31	4			1	0			
	Medicine				155	0			286	0			62	0							
	Dentistry				60	0			521	9			159	4							
	Summer school (1917)								91	338											
	Military drill								343	0											
Do	Norwegian-Danish Theological Seminary	Men	M. E	1885			3	0			14	0			2	0					
	Theology				3	0			14	0			2	0							
Do	Swedish Methodist Episcopal Theological Seminary.	Men	M. E	1885			2	0			19	0			4	0					
	Theology				2	0			19	0			4	0							
Galesburg	Knox College	Coed	Nonsect.	1836			19	19			208	434			17	34					4
	Arts and sciences				16	10			174	223			16	34							
	Graduate								1	1											
	Music				3	9			39	236			1	0							
Do	Lombard College	Coed	Nonsect.	1852			10	11			56	70			2	20			1	0	
	Arts and sciences				10	11			56	70			2	17							
	Special				3	0			3	26											
	Commerce				2	1			18	3											
	Home economics				3	0			0	29											
	Music				3	0			3	26			0	3							
	Theology				2	0			8	0							1	0			
	Military drill								50	0											
Godfrey	Monticello Seminary [1]	Women					0	23			0	158									
	Preparatory				0	23			0	100											
	Arts and sciences				0	23			0	58											

Greenville	Greenville College	Coed	F. Meth	1892			11	10			79	196			6	6					
	Preparatory				2	3			26	31											
	Arts and sciences				9	3			37	57			6	6							
	Music				0	4			20	120											
Jacksonville	Illinois College	Coed	Presb	1829			12	10			178	254			5	16					1
	Preparatory								22	14											
	Arts and sciences				8	4			95	65			5	12							
	Music				4	6			71	203			0	4							
	Military drill								80	0											
Do	Illinois Woman's College	Women	M. E	1846			3	34			0	439									
	Preparatory								0	37											
	Arts and sciences				1	22			0	215											
	Special								0	187											
	Home economics								0	53											
	Fine arts								0	64											
	Music				2	12			0	267											
Joliet	Junior College	Coed	City	1902			8	4			25	83									
	Arts and sciences				8	4			25	83											
Lake Forest	Lake Forest College	Coed[1]	Presb				36	24			227	208			20	21					
	Preparatory				17	20			134	122											
	Arts and sciences				19	4			92	69			20	21							
	Landscape architecture				0	2			1	17											
Lebanon	McKendree College	Coed	M. E	1828			11	5			67	61			4	2					
	Preparatory				2	2			26	10											
	Arts and sciences				9	3			37	26			4	2							
	Special				1	1			4	25											
	Military drill								30	0											
Lincoln	Lincoln College	Coed	Presb				4	3			12	53			1	9					
	Preparatory								2	2											
	Arts and sciences				4	3			6	25			1	9							
	Music								4	26											
Monmouth	Monmouth College	Coed	U. Presb	1856			14	8			100	296			7	23					2
	Arts and sciences				12	4			86	158			7	23							
	Special				2	4			56	138											
Mount Carroll	Frances Shimer School:	Women	Bapt	1853			1	16			0	143									
	Preparatory				1	16			0	84											
	Arts and sciences				1	16			0	49											
	Commerce				0	1			0	18											
	Home economics				0	2			0	25											
	Fine arts				0	1			0	15											
	Music				0	3			0	45											
Naperville	Evangelical Theological Seminary	Coed	Evang. Assn.	1887			4	0			57	2			3	0					
	Theology				4	0			57	2			3	0							
Do	Northwestern College	Coed	Evang. Assn.	1861			19	7			230	145			33	19					
	Preparatory				2	1			29	17											
	Arts and sciences				14	4			149	107			33	19							
	Special				3	2			52	21											

[1] Junior College.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
INDIANA—contd.																					
Crawfordsville	**Wabash College**	Men	Nonsect.	1832			25	0			217	0			22	0					
	Arts and sciences				25	0			210	0			22	0							
	Graduate								1	0											
	Special								6	0											
	Military drill								95	0											
Earlham	Earlham College	Coed	Friends	1847			15	9			153	230			18	26					
	Arts and sciences				15	9			153	230			18	26							
Franklin	Franklin College	Coed	Nonsect.	1834			11	6			102	150			5	22					3
	Arts and sciences				11	6			102	149			5	22							
	Graduate								0	1											
	Summer school (1917)				6	2			19	48											
Goshen	Goshen College	Coed	Mennon.	1903			21	6			124	153			9	8					
	Preparatory				3	2			46	34											
	Arts and sciences				15	3			50	75			9	8							
	Agriculture				1	0			8	0											
	Home economics				0	1			0	14											
	Music				3	1			20	30											
	Summer school (1917)				6	2			25	110											
Greencastle	De Pauw University	Coed	M. E.	1837			30	17			289	447			30	59			1	0	9
	Arts and sciences				26	9			289	445			30	57							
	Graduate								0	2							0	1			
	Commerce				1	0			16	1											
	Journalism				1	0			11	8											
	Education				2	0			29	156											
	Home economics				0	2			0	25											
	Music				4	8			38	237			0	2							
	Summer school (1917)								29	65											
Hanover	Hanover College	Coed	Presb.	1827			12	4			92	132			14	16					2
	Arts and sciences				12	4			92	132			14	16							

Indianapolis	Butler College	Coed	Christ.	1855			17	8			139	298			8	26					
	Arts and sciences				17	8			133	286			8	26							
	Graduate								5	10											
	Special								1	2											
	Summer school (1917)				11	0			20	60											
	Extension courses				5	0			0	238											
	Correspondence courses								3	11											
	Military drill								80	8											
Do.	Indiana Central University	Coed	U. B.	1905			10	3			50	71			3	0					1
	Preparatory				4	2			21	7											
	Arts and sciences				6	2			23	10			3	0							
	Special								6	23											
	Education				4	3			0	31											
Do.	Indiana Dental College	Coed	Nonsect.	1879			33	0			223	0			84	0					
	Denistry				33	0			223	0			84	0							
Do.	Indianapolis College of Pharmacy	Coed	Nonsect.	1904			8	0			37	2			14	2					
	Pharmacy				8	0			37	2			14	2							
Do.	Indiana Veterinary College	Men	Nonsect.	1892			18	0			93	0			55	0					
	Veterinary medicine				18	0			93	0			55	0							
La Fayette	Purdue University	Coed	State	1874			172	14			1,434	226			188	36			21	4	
	Arts and sciences				91	14			57	209			8	36							
	Graduate								16	3							3	4			
	Special								10	13											
	Chemical engineering				1	0			189	0			16	0							
	Civil engineering				8	0			167	0			23	0			6	0			
	Electrical engineering				10	0			239	0			33	0			5	0			
	Mechanical engineering				10	0			254	0			36	0							
	Agriculture				49	0			472	0			72	0			7	0			
	Forestry				1	0			30	1											
	Pharmacy				3	0			29	3											
	Summer school (1917)				5	3			12	25											
	Short winter course				29	7			58	13											
	Military drill								962	0											
Notre Dame	St. Mary's College and Academy	Women	R. C.	1855			6	44			0	260			0	11					
	Preparatory				0	17			0	157											
	Arts and sciences				6	12			0	103			0	11							
	Commercial				0	2			0	23											
	Journalism				0	1			0	5											
	Education				0	2			0	9											
	Home economics				0	2			0	43											
	Fine arts				0	2			0	24											
	Music				0	10			0	153											
	Summer school (1917)				4	14			0	100											
Do.	University of Notre Dame	Men	R. C.	1842			90	0			1,071	0			59	0		5	0		7
	Preparatory				30	0			452	0											
	Arts and sciences				60	0			183	0			20	0							
	Graduate								12	0							5	0			
	Special								8	0											
	Chemical engineering				19	0			16	0			1	0							
	Civil engineering				16	0			24	0			2	0							
	Electrical engineering				17	0			50	0			2	0							
	Mechanical engineering				17	0			39	0			3	0							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
INDIANA—contd.																					
Notre Dame	University of Notre Dame—Continued.																				
	Mining engineering								7	0											
	Agriculture				4	0			7	0											
	Commerce				16	0			65	0											
	Journalism				16	0			21	0											
	Law				10	0			127	0			28	0							
	Pharmacy								11	0			3	0							
	Short winter course				3	0			3	0											
St. Meinrad	St. Meinrad Seminary	Men	R. C	1857			17	0			189	0									
	Preparatory				12	0			114	0											
	Theology				9	0			75	0											
Terre Haute	Rose Polytechnic Institute	Men	Nonsect	1883			16	0			200	0			38	0			2	0	
	Chemical engineering								54	0			8	0							
	Civil engineering								27	0			8	0			2	0			
	Electrical engineering								51	0			10	0							
	Mechanical engineering								60	0			10	0							
	Architectural engineering								8	0			2	0							
	Military drill								175	0											
Vincennes	Vincennes University	Coed	Nonsect	1806			18	25			150	379									
	Preparatory				3	4			10	25											
	Arts and sciences				6	8			25	85											
	Agriculture				1	0			15	0											
	Education				6	9			90	180											
	Fine arts				0	1			0	6											
	Music				2	3			25	78											
	Summer school (1917)				7	10			45	105											

IOWA.

Ames	Iowa State College of Agriculture and Mechanic Arts.	Coed	State	1869			228	70			1,841	633			235	101			10	6	
	Preparatory				27	11			357	90											
	Arts and sciences				201	59			1,478	573											
	Graduate								88	19							10	6			
	General engineering								3	0											
	Chemical engineering				1	0			53	0			5	0							
	Civil engineering				11	0			116	0			25	0							
	Electrical engineering				5	0			190	0			23	0							
	Mechanical engineering				16	0			101	0			11	0							
	Mining engineering				2	0			6	0			1	0							
	Agricultural engineering				7	0			43	0			7	0							
	Architectural engineering				2	0			57	0			6	0							
	Ceramics				1	0			6	0											
	Agriculture				60	5			700	0			116	4							
	Forestry				3	0			32	0			4	0							
	Home economics				0	21			0	531			0	92							
	Music				1	1			34	52											
	Industrial science				67	22			43	42			7	5							
	Veterinary medicine				13	0			114	0			30	0							
	Summer school (1917)				67	19			307	379											
	Short winter course								2,055	579											
	Correspondence courses								11	0											
	Military drill								1,841	0											
Cedar Falls	Iowa State Teachers College	Coed	State	1876			44	60			233	1,488			16	45					
	Preparatory				4	11			73	427											
	Arts and sciences				40	49			143	984			16	45							
	Special				5	3			17	97											
	Summer school (1917)				76	63			172	2,216											
	Extension courses				18	5			20	336											
	Military drill								233	0											
Cedar Rapids	Coe College	Coed	Nonsect.	1881			26	24			232	539			9	52					4
	Preparatory				1	3			6	7											
	Arts and sciences				19	13			156	280			9	52							
	Graduate								2	2											
	Special								5	47											
	Music				6	8			76	310											
	Summer school (1917)				10	9			13	107											
	Military drill								125	0											
Clinton	Wartburg College	Men	Luth	1868			7	0			79	0									
	Preparatory				7	0			51	0											
	Arts and science				7	0			28	0											
Decorah	Luther College	Men	Luth	1861			18	0			130	0			15	0					
	Preparatory				11	0			51	0											
	Arts and sciences				13	0			79	0			15	0							
	Military drill								86	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
IOWA—continued.																					
Des Moines	Des Moines College	Coed	Bapt.	1865			5	5			100	204			5	17					
	Arts and sciences				5	5			100	204			5	17							
	Agriculture				1	0			5	24											
	Theology				2	0			10	2											
	Summer school (1917)				4	5			50	175											
	Extension courses				4	2			10	19											
	Military drill								32	0											
Do	Drake University	Coed	Nonsect.	1881			44	29			332	849			25	49			2	0	
	Preparatory								4	6											
	Arts and sciences				19	8			164	237			20	49							
	Graduate								7	14							2	0			
	Special				6	16			54	418											
	Education				7	9			9	435											
	Home economics				0	3			0	55											
	Theology				8	1			56	7			1	0							
	Law				7	0			61	2			4	0							
	Summer school (1917)								31	307											
Dubuque	Dubuque College	Men	R. C	1873			35	2			584	0			22	0			3	0	1
	Preparatory				20	2			393	0											
	Arts and sciences				15	0			190	0			22	0							
	Graduate								1	0					3	0					
	Summer school (1917)				19	7			6	299											
	Military drill								584	0											
Do	Dubuque College and Seminary	Coed	Presb				23	4			214	33									
	Preparatory				12	3			97	20											
	Arts and sciences				16	4			97	13											
	Theology				9	1			20	0											
Do	Mount St. Joseph College	Women	R. C				3	18			0	202		0		6					
	Preparatory				0	6			0	71											
	Arts and sciences				3	12			0	103			0	6							
	Special								0	9											

	Home economics								0	10											
	Fine arts								0	9											
	Music								0	118											
Do.	Wartburg Theological Seminary	Men	W. Luth	1854			5	0			49	0									
	Theology				5	0			49	0											
Fairfield	Parsons College	Coed	Presb	1875			16	7			142	224			4	14					4
	Arts and sciences				14	4			132	75			4	13							
	Music				2	3			30	153			0	1							
	Military drill								109	0											
Grinnell	Grinnell College	Coed	Nonsect	1847			43	20			323	487			32	50					3
	Arts and sciences				37	16			305	398			32	50							
	Music				9	4			40	179											
	Military drill								305	0											
Indianola	Simpson College	Coed	Meth	1860			21	16			169	408			11	26					1
	Preparatory				1	3			25	29											
	Arts and sciences				14	9			115	226			11	25							
	Commerce				2	0			31	40											
	Home economics				0	2			0	65											
	Music				4	2			25	101			0	1							
	Summer school (1917)				2	3			15	121											
Iowa City	State University of Iowa	Coed	State	1855			218	42			1,780	1,523			200	43			30	22	1
	Arts and sciences				103	30			789	1,055			66	138							
	Graduate				92	7			234	241							25	22			
	Special								49	70											
	General engineering								84	0											
	Chemical engineering								23	0											
	Civil engineering								37	0			11	0			4	0			
	Electrical engineering								26	0			5	0							
	Mechanical engineering								13	0			4	0			1	0			
	Music				2	6			5	27											
	Law				5	0			79	3			13	0							
	Medicine				34	1			234	10			26	2							
	Dentistry				29	1			269	3			64	2							
	Pharmacy				17	1			35	6			11	1							
	Library training				0	5			0	23											
	Summer school (1917)				73	10			340	462											
	Correspondence courses								21	22											
	Military drill								555	0											
Iowa Falls	Ellsworth College	Coed	Nonsect	1890			11	12			160	173			6	4					
	Preparatory				3	4			33	27											
	Arts and sciences				10	5			59	56			6	4							
	Commercial				2	2			50	8											
	Music				2	3			40	124											
	Summer school (1917)				4	5			10	69											
	Military drill								65	0											
Lamoni	Graceland College [1]	Coed	Nonsect	1847			14	13			179	253									
	Preparatory				4	4			30	41											
	Arts and sciences				3	3			24	23											
	Special				6	4			113	159											
	Education				1	1			12	16											
	Home economics				0	1			0	14											

[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
IOWA—continued.																					
Mount Pleasant	Iowa Wesleyan College	Coed	M. E.	1842			19	13			131	199			11	15					2
	Preparatory				3	3			26	25											
	Arts and sciences				9	6			88	103			11	13							
	Special								5	11											
	Commerce				2	0			6	7											
	Fine arts				0	1			1	11											
	Music				2	2			17	42			0	2							
	Summer school (1917)				7	5			14	75											
	Military drill								103	0											
Mount Vernon	Cornell College	Coed	M. E.	1853			24	19			251	365			35	42					5
	Preparatory				0	2			27	34											
	Arts and sciences				22	13			219	312			35	42							
	Special				2	4			5	19											
	Summer school (1917)				11	11			27	215											
	Military drill								216	0											
Osage	Cedar Valley Junior College	Coed	Bapt				6	12			80	146									
	Preparatory				2	5			18	27											
	Arts and sciences				4	12			22	36											
	Special								40	83											
	Agriculture				1	0			20	5											
	Commerce				1	1			24	51											
	Education				1	1			0	15											
	Home economics				0	1			0	25											
	Fine arts				0	1			0	19											
	Music				1	2			9	40											
	Summer school (1917)				4	5			7	30											
Oskaloosa	Penn College	Coed	Friends	1873			12	13			227	319			14	16					
	Preparatory				3	7			49	51											
	Arts and sciences				8	7			79	84			14	16							

	Special				4	4			99	181											
	Summer school (1917)				0	4			3	13											
Pella	Central University of Iowa	Coed	Reformed	1853			8	8			61	82			1	4					1
	Preparatory				0	2			25	36											
	Arts and sciences				6	4			27	24			1	4							
	Special				2	2			9	16											
	Home economics				0	1			0	6											
	Summer school (1917)				2	4			19	47											
	Short winter course								9	2											
Sioux City	Morningside College	Coed	M. E.	1890			17	11			207	468			19	24					
	Preparatory				1	2			25	19											
	Arts and sciences				12	6			143	210			19	24							
	Graduate								1	0											
	Special								4	10											
	Education				1	0			12	40											
	Music				3	3			28	189											
	Summer school (1917)				6	6			15	174											
KANSAS.																					
Atchison	Midland College	Coed	Luth.	1887			18	5			72	77			8	7					
	Preparatory				3	2			11	10											
	Arts and sciences				9	1			36	45			6	7							
	Special				8	2			10	22											
	Theology				3	0			15	0			2	0							
Do	St. Benedict's College	Men	R. C.	1858			27	0			275	0			12	0					
	Preparatory				23	0			215	0											
	Arts and sciences				12	0			32	0			3	0							
	Commerce				3	0			125	0			9	0							
	Education				5	0			15	0											
	Fine arts				2	0			60	0											
	Music				8	0			55	0											
	Theology				5	0			15	0											
Baldwin City	Baker University	Coed	M. E.	1858			21	12			145	217			17	30					
	Preparatory				3	2			18	5											
	Arts and sciences				15	8			120	163			16	28							
	Special								5	32											
	Music				3	2			2	17			1	2							
	Summer school (1917)				7	1			19	33											
Emporia	College of Emporia	Coed	Presb	1883			14	7			83	130			3	17					2
	Arts and sciences				12	6			79	124			3	17							
	Special				2	1			4	6											
Highland	Highland College	Coed	Presb	1857			2	6			19	78			1	2					2
	Preparatory				1	1			5	12											
	Arts and sciences				0	4			10	22			1	2							
	Special				1	1			4	44											
Holton	Campbell Junior College	Coed	City				3	4			39	96									
	Preparatory				3	4			35	80											
	Arts and sciences				3	4			4	16											
Kansas City	Kansas City Baptist Theological Seminary	Coed	Bapt.	1902			5	5			39	24			7	0					
	Theology				5	0			39	1			7	0							
	Woman's training school				5	5			0	24											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
KANSAS—continued.																					
Kansas City	Kansas City University	Coed	U. B	1896			7	12			48	77			0	3					1
	Preparatory				0	4			26	25											
	Arts and sciences				6	1			22	17			0	3							
	Journalism								0	14											
	Home economics				0	7			0	15											
	Music				1	0			0	6											
Lawrence	University of Kansas	Coed	State	1866			190	53			1,328	1,018			161	155			25	23	
	Arts and sciences				110	42			790	815			87	147							
	Graduate				101	10			42	45					23	23					
	Special								171	213											
	Engineering				47	1			389	10			29	0	2	0					
	Education				19	4			29	287											
	Fine arts				20	11			22	203			0	8							
	Law				5	0			111	1			19	0							
	Medicine				48	2			138	32			18	0							
	Pharmacy				22	1			37	5			8	0							
	Summer school (1917)				72	15			312	431											
	Extension courses				9	1			128	185											
	Correspondence courses				47	15			386	345											
	Military drill								660	0											
Lindsborg	Bethany College	Coed	Luth	1881			24	13			182	331			7	5			1	0	
	Preparatory				1	4			20	55											
	Arts and sciences				10	2			39	42			7	5							
	Graduate								1	0							1	0			
	Special				14	7			122	234											
McPherson	McPherson College	Coed	Breth	1889			22	12			163	219			16	8					2
	Preparatory				8	6			53	69											
	Arts and sciences				11	5			66	52			16	8							
	Graduate								2	1											
	Special				8	8			42	97											

	Summer school (1917)				4	2			31	47											
	Short winter course								20	14											
	Correspondence courses				1	1			2	15											
Manhattan	Kansas State Agricultural College	Coed	State	1863			131	56			1,072	799			105	83			4	2	11
	Preparatory				36	4			143	57											
	Arts and sciences				67	28			67	82			4	3							
	Graduate								25	11							4	2			
	Special								41	97											
	General engineering				16	0			114	1											
	Civil engineering				3	0			19	0			6	0							
	Electrical engineering				2	0			51	0			10	0							
	Mechanical engineering				4	0			42	0			7	0							
	Agricultural engineering				3	0			7	0											
	Flour-mill engineering								6	0			1	0							
	Agriculture				26	1			464	7			55	1							
	Architecture				3	0			8	1			4	0							
	Journalism				4	0			19	28			3	3							
	Home economics				0	23			0	499			0	76							
	Music				3	5			2	16											
	Veterinary medicine				6	0			64	0			15	0							
	Summer school (1917)				60	15			153	328											
	Short winter course				56	0			254	90											
	Extension courses				4	6			413	158											
	Correspondence courses				5	2			159	175											
	Military drill								538	0											
Ottawa	Ottawa University	Coed	Bapt	1865			14	9			110	218			7	21					1
	Preparatory				0	4			29	46											
	Arts and sciences				12	1			67	108			7	21							
	Music				2	4			28	104											
St. Marys	St. Mary's College	Men	R. C	1848			29	0			426	0			5	0					
	Preparatory				24	0			398	0											
	Arts and sciences				5	0			28	0			5	0							
	Music				2	0			40	0											
	Military drill								325	0											
Salina	Kansas Wesleyan University	Coed	Meth	1886			15	15			125	241			9	17					3
	Preparatory				1	5			19	16											
	Arts and sciences				9	5			55	105			9	17							
	Oratory				1	0			22	33											
	Fine arts				0	1			0	21											
	Music				4	4			48	113											
Sterling	Cooper College	Coed	U. P	1886			8	8			58	107			8	13					
	Preparatory				0	2			2	2											
	Arts and sciences				7	4			41	50			8	13							
	Special				0	1			14	31											
	Fine arts				0	1			6	29											
	Music				1	1			15	48											
Topeka	Washburn College	Coed	Nonsect	1865			29	16			229	462			12	33			0	1	1
	Preparatory				1	3			11	27											
	Arts and sciences				19	6			159	329			8	31			0	1			
	Special				4	7			14	102											
	Law				5	0			51	4			4	2							
	Summer school (1917)				5	1			21	53											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
KANSAS—contd.																					
Wichita	Fairmount College	Coed	Cong	1895			14	7			105	410			10	22					2
	Arts and sciences				14	7			105	185			10	22							
	Music								0	245											
	Summer school (1917)								0	120											
	Extension courses								0	97											
Do	Friends University	Coed	Friends	1898			14	13			108	148									
	Preparatory				6	6			21	22											
	Arts and sciences				8	7			71	56											
	Special								16	70											
Winfield	Southwestern College	Coed	M. E.	1886			10	10			127	173			15	14					
	Arts and sciences				7	5			121	137			14	14							
	Special				3	5			28	43											
	Music				2	2			1	6			1	0							
KENTUCKY.																					
Berea	Berea College	Coed	Nonsect.	1855			28	18			699	601			6	10					4
	Preparatory				15	10			441	358											
	Arts and sciences				7	3			58	66			6	10							
	Special				8	7			195	171											
	Education				3	0			5	15											
	Summer school (1917)				3	1			26	11											
Bowling Green	Ogden College	Men	Nonsect.	1877			8	0			140	0									
	Preparatory				4	0			85	0											
	Arts and sciences				4	0			55	0											
Danville	Centre College	Men	Presb.	1819			14	2			121	0			11	0					3
	Arts and sciences				14	2			121	0			11	0							
Do	Kentucky College for women	Women					1	22			0	170									
	Preparatory				1	9			0	120											
	Arts and sciences				1	9			0	50											
	Home economics				0	2			0	12											

	Fine arts				0	1			0	8											
	Music				0	4			0	46											
Georgetown	Georgetown College	Coed	Bapt.	1829			15	10			144	170			11	18					
	Arts and sciences				15	10			131	138			11	18							
	Special								13	32											
Lexington	Transylvania College	Coed	Nonsect.	1798			14	12			141	142			8	5			2	2	
	Arts and sciences				14	12			126	127			8	5							
	Graduate								10	2							2	2			
	Special								5	13											
	Military drill								95	0											
Do.	University of Kentucky	Coed	State	1865			84	16			495	264			63	28			7	1	
	Arts and sciences				40	7			102	147			7	22							
	Graduate								12	6							2	1			
	Special								20	20											
	Civil engineering				3	0			45	0			3	0							
	Electrical and mechanical engineering				12	3			137	0			20	0			5	0			
	Mining engineering				3	0			19	0			2	0							
	Agriculture				19	1			107	5			20	0							
	Home economics				0	5			0	84			0	6							
	Law				7	0			53	2			11	0							
	Summer school (1917)								27	53											
	Short winter course								48	9											
	Military drill								272	0											
Louisville	Louisville College of Pharmacy	Coed	Nonsect.	1871			8	0			50	2			13	1					
	Pharmacy				8	0			50	2			13	1							
Do.	Presbyterian Theological Seminary of Kentucky.	Men	Presb.	1893			7	0			59	0			13	0					
	Theology				7	0			59	0			13	0							
Do.	Southern Baptist Theological Seminary	Coed	Bapt.	1859			13	0			292	91			30	0			4	0	
	Theology				13	0			292	91			30	0			4	0			
	Correspondence courses				8	0			95	12											
Do.	University of Louisville	Coed	City	1837			144	6			287	274			29	23			0	4	1
	Arts and sciences				26	6			123	173			8	22							
	Graduate								7	17							0	4			
	Special								41	82											
	Law				7	0			13	2			5	1							
	Medicine				111	0			103	0			16	0							
Russellville	Bethel College	Men	Bapt.	1849			13	0			114	0			2	0					
	Preparatory				5	0			80	0											
	Arts and sciences				8	0			30	0			2	0							
	Special								4	0											
St. Mary	St. Mary's College	Men	R. C.	1821			10	0			90	0			2	0					
	Preparatory				8	0			60	0											
	Arts and sciences				6	0			25	0			2	0							
	Graduate				5	0			10	0											
	Special				4	0			45	0											
	Music				2	0			12	0											
Winchester	Kentucky Wesleyan College	Coed	Meth.	1866			7	4			140	90			2	2					2
	Preparatory				2	3			70	60											
	Arts and sciences				6	2			70	30			2	2							
	Military drill								120	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
LOUISIANA.																					
Baton Rouge	Louisiana State University and Agricultural and Mechanical College.	Coed	State	1860			65	13			580	258			74	17			5	2	
	Preparatory				4	4			23	47											
	Arts and sciences				57	9			166	149			24	10							
	Graduate								19	9							5	2			
	General engineering								91	0											
	Chemical engineering								12	0			1	0							
	Civil engineering								8	0			2	0							
	Electrical engineering								18	0			4	0							
	Mechanical engineering								12	0			9	0							
	Sugar engineering								71	0			5	0							
	Agriculture								124	2			20	0							
	Education								7	49			3	7							
	Law				4	0			29	2			6	0							
	Summer school (1917)								258	393											
	Short winter course								164	6											
	Military drill								386	0											
Mansfield	Mansfield Female College[1]	Women	M. E. So.	1854			2	10			0	126									
	Preparatory				0	4			0	60											
	Arts and sciences				1	4			0	40											
	Education				1	1			0	35											
	Music				0	4			0	70											
New Orleans	H. Sophie Newcomb Memorial College	Women	Nonsect.	1887			14	45			0	417			0	51					
	Arts and sciences				14	45			0	165			0	30							
	Architecture								0	2											
	Commerce								0	69											
	Education				2	1			0	169			0	20							
	Home economics				0	4			0	53											
	Fine arts				2	6			0	54											
	Music				3	1			0	24			0	1							
Do	Loyola University	Men	R. C.	1904			64	3			262	80									
	Arts and sciences				8	0			20	0											

	Commerce				4	3			102	78											
	Law				16	0			54	1											
	Dentistry				29	0			46	1											
	Pharmacy				7	0			40	5											
Do	Tulane University of Louisiana	Men	Nonsect	1834			268	9			1,277	39			127	3			4	5	1
	Arts and sciences				33	0			185	0			10	0							
	Graduate				33	4			8	15							2	5			
	Chemical engineering								25	0			5	0							
	Civil engineering								37	0			5	0							
	Electrical and mechanical engineering								59	0			8	0			2	0			
	Architecture				2	0			10	0			4	0							
	Commerce				7	0			316	0			1	0							
	Journalism				1	0			6	0											
	Law				15	0			53	3			9	0							
	Medicine				179	3			510	17			62	1							
	Dentistry				46	2			62	1			21	0							
	Pharmacy				15	0			6	3			2	2							
	Summer school (1917)				26	18			391	752											
	Extension courses				18	11			7	81											
	Military drill								238	0											
Pineville	Louisiana College	Coed	Bapt				8	3			200	75			1	0					
	Preparatory				1	1			60	45											
	Arts and sciences				7	1			140	30			1	0							
	Home economics				0	1			0	20											
	Fine arts				0	1			0	12											
	Music				1	1			0	48											
	Military drill								150	0											
MAINE.																					
Brunswick	Bowdoin College	Men	Nonsect	1802			71	0			418	0			58	0					6
	Arts and sciences				21	0			374	0			40	0							
	Medicine				50	0			44	0			18	0							
	Military drill								300	0											
Lewiston	Bates College	Coed	Nonsect	1863			26	4			272	214			44	48					4
	Arts and sciences				26	4			272	214			44	48							
Orono	University of Maine	Coed	State	1868			90	5			643	228			79	27			3	1	1
	Arts and sciences				65	2			190	136			10	17							
	Graduate								4	5							0	1			
	General engineering								16	0											
	Chemical engineering								94	0			8	0			1	0			
	Civil engineering								54	0			4	0			2	0			
	Electrical engineering								82	0			12	0							
	Mechanical engineering								76	0			6	0							
	Agriculture				19	3			99	0			25	0							
	Home economics				0	3			0	92			0	10							
	Law				6	0			34	0			14	0							
	Summer school (1917)								42	50											
	Military drill								500	0											
Waterville	Colby College	Coed	Nonsect	1881			24	2			227	162									
	Arts and sciences				24	2			207	153											
	Special								20	9											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MARYLAND.																					
Annapolis	St. John's College	Men	Nonsect.	1789			14	0			211	0			25	0			4	0	8
	Arts and sciences				14	0			210	0			25	0							
	Graduate								4	0							4	0			
	Military drill								210	0											
Do	United States Naval Academy	Men	Nat'l.	1845			197	0			1,371	0	0	0	0	0	0	0	0	0	
	Arts and sciences				197	0			1,371	0				0							
	Military drill								1,371	0											
Baltimore	Baltimore College of Dental Surgery	Men	Nonsect.	1839			67	0			123	0			75	0	0	0	0	0	
	Dentistry				67	0			123	0			75	0			0	0	0	0	
Do	Goucher College	Women	M. E.	1888			23	31			0	712			0	100			0	0	
	Arts and sciences				23	31			0	712			0	100							
Do	Johns Hopkins University	Coed	Nonsect.	1876			291	19			1,384	432			157	11			18	7	
	Arts and sciences				50	0			223	0			53	2							
	Graduate				57	2			110	52							18	7			
	Engineering				10	0			133	0			26	0							
	Education				24	2			103	247											
	Medicine				161	15			334	56			78	9							
	Business economics				16	0			280	71											
	Technical workers				11	0			201	6											
	Summer school (1917)				40	14			193	377											
	Military drill								248	0											
Do	Morgan College (colored)	Coed	Nonsect.	1872			16	16			113	156			4	0					
	Preparatory				12	13			93	138											
	Arts and sciences				4	3			20	18			4	0							
	Special								40	0											
	Education								34	33											
	Summer school (1917)								4	24											
Do	Mount St. Joseph's College	Men	R. C.	1876			15	0			190	0			5	0					
	Preparatory				12	0			185	0											
	Arts and sciences				4	0			5	0			5	0							

Do.	St. Mary's Seminary	Men	R. C	1791			15	0			350	0			4	0					8
	Theology				15	0			350	0			4	0							
Do.	University of Maryland, Dental Department	Coed	Nonsect.	1882			26	0			212	3			79	3					
	Dentistry				26	0			212	3			79	3							
Chestertown	Washington College	Coed	Nonsect.	1723			11	0			92	13			19	5			3	0	2
	Preparatory				2	0			24	0											
	Arts and sciences				9	0			68	13			19	5			3	0			
	Military drill								90	0											
College Park	Maryland State College of Agriculture	Coed	State	1859			42	0			201	5			14	0			1	0	2
	Preparatory				6	0			13	1											
	Arts and sciences				5	0			20	0			1	0							
	Graduate				7	0			10	0							1	0			
	Special								12	1											
	Civil engineering				4	0			16	0			2	0							
	Electrical engineering				3	0			18	0											
	Mechanical engineering				4	0			10	0											
	Agriculture				17	0			89	3			10	0							
	Education				3	0			13	0			1	0							
	Summer school (1917)				30	8			19	123											
	Short winter course				39	7			13	37											
	Military drill								121	0											
Ellicott City	Rock Hill College	Men	R. C	1857			10	0			69	0			5	0			1	0	
	Preparatory				5	0			50	0											
	Arts and sciences				4	0			12	0			5	0			1	0			
	Commerce				1	0			7	0											
	Military drill								69	0											
Emmitsburg	Mount St. Mary's College	Men	R. C	1808			42	0			570	0			18	0			11	0	11
	Preparatory				24	0			371	0											
	Arts and sciences				20	0			146	0			18	0			11	0			
	Theology				10	0			53	0											
	Military drill								151	0											
Frederick	Hood College	Women	Reformed	1893			6	19			0	284			21	0					
	Arts and sciences				5	11			0	172			0	21							
	Special				1	8			0	112											
	Education				1	0			0	44											
	Home economics				0	3			0	58											
	Fine arts				0	2			0	25											
	Music				1	4			0	105											
Lutherville	Maryland College for Women	Women	Nonsect.	1853			1	24			0	125			0	16					
	Preparatory				0	2			0	6											
	Arts and sciences				1	22			0	100			0	15							
	Special								0	10											
	Home economics								0	20											
	Music								0	15			0	1							
New Windsor	Blue Ridge College	Coed	Breth				11	7			70	72			4	1					1
	Preparatory				4	5			16	30											
	Arts and sciences				7	2			23	19			4	1							
	Agriculture								5	0											
	Fine arts				0	1			19	10											
	Music				2	2			44	25											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MARYLAND—contd.																					
Westminster	Western Maryland College	Coed	M. P.	1867			13	9			95	114			12	15					
	Preparatory				8	2			30	25											
	Arts and sciences				10	7			65	89			12	15							
Do.	Westminster Theological Seminary	Men	M. P.	1882			5	1			38	0			1	0					
	Theology				5	1			38	0			1	0							
MASSACHUSETTS.																					
Amherst	Amherst College	Men	Nonsect.	1821			47	0			369	0			64	0					7
	Arts and sciences				47	0			366	0			64	0							
	Graduate								3	0											
	Military drill								293	0											
Do.	Massachusetts Agricultural College	Coed	State	1867			72	2			470	33			50	4			1	0	
	Agriculture				72	2			388	24			50	4							
	Graduate								28	1							1	0			
	Special								54	8											
	Summer school (1917)								12	78											
	Short winter course				25	0			84	6											
	Extension courses								(2,997)												
	Correspondence courses								565	282											
	Military drill								292	0											
Boston	Boston University	Coed	M. E.	1873			202	13			1,940	1,215			203	20			18	11	
	Arts and sciences				39	8			108	382			39	0							
	Graduate								108	49							11	9			
	Special								679	417											
	Commerce				34	2			608	161			36	5							
	Education								13	167			0	5							
	Theology				26	2			57	6			46	2							
	Law				33	0			309	18			69	6			7	2			
	Medicine				70	6			58	15			13	2							
	Summer school (1917)				21	2			97	376											

Do.	Massachusetts College of Pharmacy	Coed	Nonsect.	1867			12	0			167	24			23	1			8	1	
	Pharmacy				12	0			167	24			23	1			8	1			
Do.	Portia School of Law	Women.	Nonsect.	1909			7	1			0	90									
	Law				7	1			0	90											
Do.	St. John's Ecclesiastical Seminary	Men	R. C.	1884			14	0			160	0									
	Theology				14	0			160	0											
Do.	Simmons College	Women.	Nonsect.				30	90			0	1,073			0	225					
	Arts and sciences				30	90			0	1,073			0	225							
	Summer school (1917)				10	17			13	300											
	Extension courses				8	15			0	155											
Do.	Suffolk Law School	Men	Nonsect.	1906			13	0			446	0			57	0					
	Law				13	0			446	0			57	0							
Cambridge.	Andover Theological Seminary	Men	Nonsect.	1808			6	0			19	0			1	0					
	Theology				6	0			19	0			1	0							
Do.	Episcopal Theological School	Men	P. E.	1867			6	0			11	0			6	0					1
	Theology				6	0			11	0			6	0							
Do.	Harvard University	Men	Nonsect.	1638			561	0			3,092	0			592	0			144	0	6
	Arts and sciences				270	0			1,681	0			303	0							
	Graduate								296	0							134	0			
	Special								39	0											
	Architecture				12	0			25	0			4	0							
	Forestry				7	0			6	0			3	0							
	Commerce				19	0			93	0			26	0							
	Theology				10	0			59	0							5	0			
	Law				20	0			296	0			79	0			5	0			
	Medicine				133	0			386	0			106	0							
	Dentistry				110	0			211	0			71	0							
	Summer school (1917)								401	505											
	Military drill								1,359	0											
Do.	Massachusetts Institute of Technology	Coed	Nonsect.	1865			231	3			1,615	19			254	2			21	0	
	Arts and sciences				129	2			194	9			20	2							
	Special								18	3											
	Graduate								32	0							21	0			
	Chemical engineering				36	0			257	0			43	0							
	Civil engineering				23	0			209	0			40	0							
	Electrical engineering				24	0			219	0			43	0							
	Mechanical engineering				41	0			268	0			53	0							
	Mining engineering				11	0			59	0			6	0							
	Electrochemical engineering								43	1			8	0							
	Sanitary engineering								22	0			3	0							
	Naval architecture				9	0			77	0			1	0							
	Engineering administration								150	0			16	0							
	Architecture				12	1			67	6			21	0							
	Summer school (1917)				50	0			(630)												
	Military drill								1,300	0											
Do.	New-Church Theological School	Coed	Swed'b.	1866			5	1			14	0									
	Theology				5	1			14	0											
	Correspondence courses								17	7											
Do.	Radcliffe College	Women.	Nonsect.	1879			138	0			0	618			0	128			0	27	
	Arts and sciences				138	0			0	486			0	128							
	Graduate								0	90							0	27			
	Special								0	42											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MASSACHUSETTS—continued.																					
Chestnut Hill	Boston College	Men	R. C.	1864			53	0			1,860	0			78	0					
	Preparatory				25	0			1,235	0											
	Arts and sciences				28	0			625	0			78	0							
	Military drill								500	0											
Lowell	Lowell Textile School	Coed	Nonsect.				21	0			120	2			6	0					
	Textile engineering				5	0			40	0			2	0							
	Chemistry and textile coloring				6	0			51	1			4	0							
	Manufacturing courses				10	0			29	1											
Newton Center	Newton Theological Institution	Coed	Bapt.	1825			9	0			58	2									
	Theology				9	0			58	2											
	Summer school (1917)				5	0			35	0											
Northampton	Smith College	Women	Nonsect.	1875			58	123			0	2,103			0	399			0	9	
	Arts and sciences				58	123			0	2,103			0	399			0	9			
Norton	Wheaton College	Women	Nonsect.	1834			6	23			0	194			0	37					
	Arts and sciences				6	23			0	194			0	37							
	Special								0	5											
South Hadley	Mount Holyoke College	Women	Nonsect.	1837			12	75			0	858			0	190			0	6	
	Arts and sciences				12	75			0	844			0	190							
	Graduate								0	13							0	6			
	Special								0	1											
Tufts College	Tufts College	Coed	Nonsect.	1854			224	7			1,539	197			300	27			1	4	3
	Preparatory								20	0											
	Arts and sciences				48	4			440	146			29	19							
	Graduate				12	0			1	7							1	4			
	Special								0	7											
	General engineering				24	0			141	0											
	Chemical engineering								15	0			7	0							
	Civil engineering								11	0			6	0							
	Electrical engineering								9	0			1	0							

	Mechanical engineering								10	0				5	0							
	Structural engineering								14	0				7	0							
	Theology				4	0			13	1				3	1							
	Medicine				69	3			369	25				66	4							
	Dentistry				67	0			496	11				176	3							
Wellesley	Wellesley College	Women	Nonsect	1875			20	107				0 1,	612			0	328			0	4	
	Arts and sciences				17	100			0	1,531				0	328							
	Graduate								0	23								0	4			
	Special				3	7			0	58												
Williamstown	Williams College	Men	Nonsect	1793			43	0			29	2	0			47	0			2	0	3
	Arts and sciences				43	0			292	0				47	0			2	0			
	Military drill								214	0												
Worcester	Clark College	Men	Nonsect	1902			23	0			11	5	0			25	0					
	Arts and sciences				23	0			109	0				25	0							
	Special								6	0												
	Military drill								60	0												
Do	Clark University	Coed	Nonsect	1889			27	0			5	5	15							15	6	
	Graduate				27	0			55	15								15	6			
Do	College of the Holy Cross	Men	R. C.	1843			36	0			63	6	0			99	0					5
	Arts and sciences				36	0			636	0				99	0							
Do	Worcester Polytechnic Institute	Men	Nonsect	1868			45	0			42	9	0			63	0			2	0	
	General engineering				16	0			145	0												
	Chemical engineering				7	0			59	0				16	0			1	0			
	Civil engineering				4	0			52	0				12	0							
	Electrical engineering				6	0			91	0				20	0			1	0			
	Mechanical engineering				12	0			82	0				15	0							
MICHIGAN.																						
Adrian	Adrian College	Coed	M. P.	1859			13	10			5	7	73			3	5			0	1	3
	Preparatory				0	3			8	2												
	Arts and sciences				12	5			43	58				3	3			0	1			
	Music				1	2			6	13				0	2							
Albion	Albion College	Coed	M. E.	1861			19	8			21	9	309			15	28					3
	Arts and sciences				16	6			198	187				13	28							
	Music				3	2			21	122				2	0							
	Military drill								172	0												
Alma	Alma College	Coed	Presb.	1887			15	6			9	8	121			7	11					1
	Arts and sciences				15	6			92	60				7	11							
	Special								6	61												
Ann Arbor	University of Michigan	Coed	State	1841			433	5			5,03	1 1,	703			708	269			85	40	14
	Arts and sciences				221	4			1,621	1,290				235	261							
	Graduate								184	81								82	40			
	General engineering				175	1			1,096	5												
	Chemical engineering								142	0				28	0							
	Civil engineering								186	0				71	0			1	0			
	Electrical engineering								147	0				40	0							
	Mechanical engineering								197	0				50	0							
	Marine engineering								38	0				10	0							
	Architectural engineering								22	0				7	0							
	Aeronautical engineering								7	0				6	0							
	Architecture								75	3				9	0							
	Forestry								67	16				6	0			1	0			

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917-18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MICHIGAN—contd.																					
Ann Arbor	University of Michigan—Continued.																				
	Commerce								405	44							1	0			
	Journalism								63	47											
	Education								57	402											
	Fine arts								84	214											
	Music								83	118											
	Law				26	0			184	7			51	0							
	Medicine				61	0			356	26			64	4							
	Dentistry				22	0			325	12			110	2							
	Pharmacy				19	0			70	9			21	2							
	Summer school (1917)				196	5			1,040	409											
	Military drill								1,700	0											
Detroit	Detroit College of Law	Coed	Y. M.C.A.	1891			32	0			216	12			33	0					
	Law				32	0			216	12			33	0							
Do	Detroit College of Medicine and Surgery	Coed	Nonsect.	1868			189	1			164	2			21	0					
	Medicine				189	1			164	2			21	0							
Do	Detroit Junior College	Coed	City				5	2			182	104									
	Arts and sciences				5	2			182	104											
Do	University of Detroit	Men	R. C.	1877			71	0			689	14			25	0			6	0	
	Preparatory				20	0			362	0											
	Arts and sciences				15	0			65	0			12	0			6	0			
	Special								8	0											
	Chemical engineering				2	0			11	0											
	Civil engineering				1	0			14	0											
	Electrical engineering				2	0			24	0											
	Mechanical engineering				2	0			29	0											
	Commerce				14	0			108	2											
	Law				28	0			72	12			13	0							

East Lansing	Michigan Agricultural College	Coed	State	1857			138	28			785	355			117	57			6	0	
	Graduate								8	1							6	0			
	General engineering				73	0			201	0											
	Chemical engineering				2	0			11	0			2	0							
	Civil engineering				8	0			27	0			13	0							
	Electrical engineering				2	0			15	0			6	0							
	Mechanical engineering				14	0			25	0			13	0							
	Agriculture				26	2			439	2			71	0							
	Forestry				2	0			6	0			2	0							
	Home economics				0	26			0	352			0	57							
	Veterinary medicine				6	0			53	0			10	0							
	Summer school (1917)				30	10			96	110											
	Short winter course								356	0											
	Military drill								750	0											
Grand Rapids	Grand Rapids Junior College	Coed	City				13	12			32	78									
	Arts and sciences				13	12			32	78											
Hillsdale	Hillsdale College	Coed	Nonsect.	1856			16	6			100	199			14	11					
	Arts and sciences				11	1			68	96			12	11							
	Special				5	5			32	103											
	Commerce				2	1			15	32			2	0							
	Home economics				0	1			0	25											
	Music				3	1			17	46											
	Military drill								48	0											
Holland	Hope College	Coed	Ref.	1866			18	4			170	149			19	19					1
	Preparatory				15	4			51	33											
	Arts and sciences				15	4			111	94			19	19							
	Music				3	0			17	47											
Do.	Western Theological Seminary	Men	Ref.	1866			4	0			29	0									
	Theology				4	0			29	0											
Houghton	Michigan College of Mines	Men	State	1886			21	0			69	0			29	0					
	Mining engineering				21	0			69	0			29	0							
Kalamazoo	Kalamazoo College	Coed	Bapt.	1833			13	3			115	140			13	27					2
	Arts and sciences				12	3			112	114			13	27							
	Special								0	1											
	Education				1	0			3	25											
Olivet	Olivet College	Coed	Nonsect.	1844			11	8			77	94			17	11					
	Arts and sciences				11	8			71	81			17	11							
	Graduate								0	2											
	Special								6	11											
MINNESOTA.																					
Collegeville	St. John's University	Men	R. C.	1857			51	0			432	0			7	0			5	0	
	Preparatory				28	0			190	0											
	Arts and sciences				18	0			65	0			7	0			5	0			
	Special				24	0			175	0											
	Theology				9	0			40	0											
Faribault	Seabury Divinity School	Men	P. E.	1858			8	0			31	0			2	0					
	Theology				8	0			31	0			2	0							
Hibbing	Hibbing Junior College	Coed	City				3	3			5	16									
	Arts and sciences				3	3			5	16											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917-18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MINNESOTA—con.																					
Minneapolis	Augsburg Seminary	Men	Luth	1869			15	0			116	0			14	0					
	Preparatory				15	0			64	0											
	Arts and sciences				10	0			25	0			6	0							
	Theology				4	0			27	0			8	0							
Do	University of Minnesota	Coed	State	1869			536	78			3,722	2,331			305	285			39	21	
	Preparatory				71	33			813	355											
	Arts and sciences				120	12			934	1,381			86	181							
	Graduate				1	0			221	106							36	21			
	General engineering				23	0			168	2			2	0							
	Chemical engineering				17	1			97	2			9	0							
	Civil engineering				4	0			70	0			8	0							
	Electrical engineering				6	0			129	0			10	0			1	0			
	Mechanical engineering				7	0			55	0			8	0			2	0			
	Mining engineering				11	0			74	0			13	0							
	Agriculture				61	3			239	0			34	0							
	Architecture				6	0			35	2			4	0							
	Forestry				5	0			28	0			5	0							
	Education				7	1			39	160			7	33							
	Home economics				1	24			0	286			0	64							
	Law				11	0			142	2			18	0							
	Medicine				128	2			283	13			17	2							
	Dentistry				50	2			336	4			74	1							
	Pharmacy				7	0			59	18			10	4							
	Summer school (1917)								193	449											
	Short winter course								1,710	1,434											
	Extension courses				11	0			1,196	1,038											
	Military drill								1,661	0											

Northfield	Carleton College	Coed	Nonsect.	1867			28	10			205	340			24	44					
	Arts and sciences				25	8			197	263			24	44							
	Fine arts								0	38											
	Music				3	2			8	39											
	Military drill								75	0											
Do.	St. Olaf College	Coed	Luth.	1874			31	7			267	282			50	40					
	Preparatory				1	1			8	8											
	Arts and sciences				26	3			252	218			49	40							
	Special								2	2											
	Music				4	3			5	54			1	0							
	Military drill								100	0											
Rochester	Junior College	Coed	City				2	3			4	3									
	Arts and sciences				2	3			4	3											
St. Paul	Bethel Theological Seminary	Men	Bapt.				3	0			13	0			1	0			3	0	
	Theology				3	0			13	0			1	0			3	0			
Do.	College of St. Catherine	Women	R. C.				18	22			0	227									
	Arts and sciences				18	22			0	227											
	Special								0	18											
	Education				2	2			0	56											
	Home economics				0	3			0	34											
	Fine arts				1	3			0	42											
	Music				5	7			0	186											
	Summer school (1917)				2	14			0	187											
Do.	College of St. Thomas	Men	R. C.				47	0			840	0			11	0					
	Preparatory				25	0			702	0											
	Arts and sciences				22	0			138	0			11	0							
	Military drill								840	0											
Do.	Hamline University	Coed	M. E.	1864			21	2			183	235			8	24					2
	Arts and sciences				21	2			183	235			8	24							
	Military drill								160	0											
Do.	Luther Theological Seminary	Men	Luth.	1885			10	0			126	0			33	0					
	Theology				10	0			126	0			33	0							
Do.	Macalester College	Coed	Presb.	1885			23	17			107	213			12	18					5
	Arts and sciences				18	8			87	163			12	18							
	Music				5	9			24	94											
	Military drill								65	0											
Do.	St. Paul College of Law	Men	Nonsect.	1900			15	0			130	0			26	0					
	Law				15	0			130	0			26	0							
Do.	St. Paul Seminary	Men	R. C.	1894			12	0			210	0			2	0					
	Theology				12	0			210	0			2	0							
St. Peter	Gustavus Adolphus College	Coed	Luth.	1862			16	8			151	184			16	18					1
	Preparatory				1	3			27	23											
	Arts and sciences				10	1			90	80			16	18							
	Special				5	4			34	81											
Winona	College of St. Teresa	Women	R. C.				11	19			0	187			0	12					
	Arts and sciences				8	11			0	152			0	12							
	Music				3	8			0	35											
	Summer school (1917)				9	11			0	145											
	Correspondence				0	1			0	11											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MISSISSIPPI.																					
Agricultural College.	Mississippi Agricultural and Mechanical College.	Coed	State	1880			83	0			976	0			61	0			1	0	
	General science course				24	0			74	0			12	0							
	Special				24	0			94	0											
	General engineering				11	0			159	0											
	Civil engineering				10	0			20	0			4	0							
	Electrical engineering				13	0			59	0			11	0							
	Mechanical engineering				13	0			11	0			4	0							
	Agriculture				33	0			443	0			29	0							
	Commerce				14	0			74	0			3	0							
	Education				16	0			42	0							1	0			
	Summer school (1917)				92	0			164	0											
	Short winter course				3	0			58	0											
	Correspondence courses				8	0			27	21											
	Military drill								801	0											
Brookhaven	Whitworth Female College	Women.	M. E. So.	1859			1	15			0	248			0	9					
	Preparatory				1	15			0	51											
	Arts and sciences				1	15			0	56			0	9							
	Special								0	141											
	Home economics								0	18											
	Fine arts								0	46											
	Music								0	171											
Columbus	Mississippi Industrial Institute and College.	Women.	State	1885			6	60			0	933			0	121					
	Arts and sciences				6	60			0	707			0	121							
	Special								0	226											
Grenada	Grenada College	Women.	M. E. So.	1852			1	9			0	140			0	8					
	Preparatory				0	3			0	49											
	Arts and sciences				1	6			0	59			0	8							

	Special								0	32											
	Home economics								0	31											
	Fine arts								0	28											
	Music								0	78											
Holly Springs	Mississippi Synodical College[1]	Women	Presb	1883			0	10			0	109									
	Preparatory				0	5			0	71											
	Arts and sciences				0	4			0	38											
	Home economics				0	2			0	28											
	Fine arts				0	2			0	42											
	Music				0	2			0	55											
Holly Springs	Rust College (colored)	Coed	M. E.	1872			5	13			29	38			1	2					
	Preparatory				2	7			20	36											
	Arts and sciences				3	3			6	5			1	2							
	Commerce				0	1			3	6											
	Education				0	1			0	8											
	Music				0	1			3	30											
Jackson	Belhaven College	Women	Presb				0	22			0	144			0	12					
	Preparatory				0	4			0	42											
	Arts and sciences				0	10			0	102			0	12							
	Special				0	8			0	85											
Do	Millsaps College	Coed	M. E. So	1892			17	0			164	58			11	10			0	1	
	Preparatory				5	0			47	0											
	Arts and sciences				10	0			107	56			10	10							
	Graduate								0	1							0	1			
	Law				2	0			10	1			1	0							
	Military drill								118	0											
Meridian	Meridian College	Coed	Nonsect	1901			7	30			131	585			5	23			1	1	3
	Preparatory				2	5			48	101											
	Arts and sciences				3	9			50	151			5	10			1	1			
	Special								5	75											
	Education				1	0			15	58											
	Home economics				0	3			0	45											
	Fine arts				0	1			1	8											
	Music				1	12			12	201			0	13							
	Summer school (1917)				9	4			38	260											
	Military drill								101	324											
University	University of Mississippi	Coed	State	1848			31	1			324	72			63	13			2	0	
	Arts and sciences				20	1			183	52			32	13							
	Graduate								3	0							2	0			
	Special								34	18											
	Civil Engineering				2	0			26	0			4	0							
	Law				2	0			38	1			19	0							
	Medicine				6	0			58	0											
	Pharmacy				1	0			15	1			8	0							
	Summer school (1917)								58	114											
	Military drill								200	0											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MISSOURI.																					
Canton	Culver-Stockton College	Coed	Chris.	1856			11	3			80	88			4	1			1	1	2
	Preparatory				2	1			10	25											
	Arts and sciences				9	2			40	20			4	1							
	Graduate				2	0			2	1							1	1			
	Special				0	3			4	10											
	Music				0	3			8	25											
	Theology				2	0			18	7											
	Summer school (1917)								10	30											
Clinton	Clinton Theological Seminary	Coed	S. D. Ad.				8	5			130	80			3	0					
	Theology				8	5			130	80			3	0							
Columbia	Stephens College[1]	Women	Bapt.	1856			4	27			4	320									
	Preparatory				1	8			0	31											
	Arts and sciences				2	15			0	204											
	Special				1	9			4	85											
Do	University of Missouri	Coed	State	1847			225	7			2,194	1,415			236	162			37	16	1
	Arts and sciences				73	5			737	809			60	30							
	Graduate				38	0			117	73							32	16			
	General engineering				52	0			321	2			30	0							
	Chemical engineering								20	0											
	Civil engineering								29	0			2	0							
	Electrical engineering								22	0			2	0							
	Mechanical engineering								11	0			2	0							
	Mining engineering								75	0			11	0			3	0			
	Metallurgical engineering								20	0			9	0			2	0			
	Agriculture				56	1			497	46			55	2							
	Commerce				14	0			30	3			2	1							
	Journalism				11	0			56	40			16	13							
	Education				22	1			135	420			37	116							
	Law				7	0			44	4			10	0							
	Medicine				11	0			80	18											

	Summer (school 1917)				63	5			370	598											
	Short winter course				28	3			167	14											
	Extension courses								13	55											
	Correspondence courses								202	347											
	Military drill								875	0											
Fayette	Central College	Coed	M. E. So.	1857			14	0			106	100			7	4					2
	Preparatory				1	0			17	0											
	Arts and sciences				13	0			89	100			7	4							
Do.	Howard-Payne College[1]	Women	M. E. So.				10	16			10	150									
	Preparatory				2	6			0	40											
	Arts and sciences				8	3			0	75											
	Special				1	7			10	40											
	Education				2	0			0	21											
	Home economics				0	1			0	25											
	Fine arts				0	2			0	60											
	Music				1	6			10	100											
Fulton	Synodical College[1]	Women	Presb.	1871			1	14			0	150									
	Preparatory				0	8			0	47											
	Arts and sciences				0	8			0	32											
	Special				1	6			0	71											
Do.	Westminster College	Men	Presb.	1849			10	0			146	0			7	0					4
	Preparatory				6	0			37	0											
	Arts and sciences				10	0			109	0			7	0							
Do.	William Woods College[1]	Women	Chris.				4	18			0	200									
	Preparatory				0	4			0	60											
	Arts and sciences				2	8			0	100											
	Special				2	6			0	40											
Kansas City	Kansas City College of Pharmacy	Coed	Nonsect.	1885			7	1			44	2			19	1					
	Pharmacy				7	1			44	2			19	1							
Do.	Kansas City Dental College	Men	Nonsect.	1881			19	0			195	0			70	0					
	Dentistry				19	0			196	0			70	0							
Do.	Kansas City School of Law	Coed	Nonsect.	1895			24	0			204	7			48	2					
	Law				24	0			204	7			48	2							
Do.	Kansas City Polytechnic Institute[1]	Coed	City				16	6			256	209									
	Arts and sciences				16	6			256	209											
Do.	Western Dental College	Coed	Nonsect.	1890			29	0			160	2			54	0					
	Dentistry				29	0			160	2			54	0							
Liberty	William Jewell College	Men	Bapt.	1849			21	0			339	0			39	0					
	Preparatory				5	0			101	0											
	Arts and sciences				16	0			238	0			39	0							
Marshall	Missouri Valley College	Coed	Presb.	1889			10	3			90	156			3	8					1
	Arts and sciences				8	3			68	120			3	8							
	Music				2	0			22	36											
Mexico	Hardin Junior College[1]	Women	Bapt.	1873			4	15			0	239									
	Preparatory				3	8			0	151											
	Arts and sciences				3	8			0	14											
	Business				0	1			0	65											
	Home economics				0	1			0	27											
	Fine arts				0	1			0	18											
	Music				1	6			0	131											
	Oratory				0	1			0	32											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MISSOURI—contd.																					
Morrisville	Scarritt-Morrisville College [1]	Coed	M. E. So.	1846			2	3			20	40									
	Arts and sciences				2	2			20	30											
	Music				0	1			0	10											
Nevada	Cottey College [1]	Women					0	24			0	235									
	Preparatory				0	8			0	85											
	Arts and sciences				0	9			0	60											
	Special				0	7			0	59											
	Commerce				0	1			0	25											
	Education				0	1			0	24											
	Home economics				0	1			0	15											
	Fine arts				0	1			0	20											
	Music				0	4			0	80											
Parkville	Park College	Coed	Nonsect	1875			12	6			215	217			19	25					1
	Preparatory				0	4			85	64											
	Arts and sciences				12	2			130	153			19	25							
St. Joseph	St. Joseph Veterinary College	Men	Nonsect				19	0			106	0			53	0					
	Veterinary medicine				19	0			106	0			53	0							
St. Louis	City College of Law and Finance	Coed	Nonsect				27	0			239	10									
	Preparatory				3	0			36	1					17	0					
	Commerce				7	0			128	7											
	Law				17	0			75	2			17	0							
Do	Concordia Theological Seminary	Men	Luth	1839			8	0			345	0			85	0					3
	Theology				8	0			345	0			85	0							
Do	Eden Theological Seminary	Men	Evang	1850			5	0			91	0			32	0					4
	Theology				5	0			91	0			32	0							
Do	Forest Park College [1]	Women	Nonsect	1861			4	21			0	101									
	Preparatory				4	21			0	91											
	Arts and sciences								0	10											

	Special								0	45											
	Home economics								0	10											
	Fine arts								0	6											
	Music								0	80											
	Summer school (1917)								4	10											
	Correspondence courses								0	3											
Do.	St. Louis College of Physicians and Surgeons	Coed	Nonsect.				31	0			78	4			24	1					
	Medicine				31	0			78	4			24	1							
Do.	St. Louis University	Men	R. C	1818			224	0			1,950	0			203	0			30	0	1
	Preparatory				24	0			520	0											
	Arts and sciences				19	0			176	0			53	0							
	Graduate				8	0			17	0							19	0			
	Special								419	0											
	Commerce				31	0			211	0			6	0			1	0			
	Theology				9	0			92	0											
	Law				16	0			97	0			8	0			10	0			
	Medicine				101	0			234	0			57	0							
	Dentistry				21	0			184	0			79	0							
	Military drill								504	0											
Do.	Washington University	Coed	Nonsect.	1857			189	8			847	463			112	50			5	4	2
	Arts and sciences				68	4			180	264			17	44							
	Graduate								27	17							5	4			
	Special								40	30											
	General engineering								9	0											
	Chemical engineering								45	0			2	0							
	Civil engineering								36	0			9	0							
	Electrical engineering								44	0			3	0							
	Mechanical engineering								40	0			8	0							
	Architecture								19	5			1	2							
	Commerce								6	0											
	Fine arts				7	4			79	146											
	Law				8	0			77	0			13	3							
	Medicine				87	0			129	0			18	0							
	Dentistry				19	0			116	1			46	1							
	Extension courses								322	364											
Springfield	Drury College	Coed	Nonsect.	1873			14	4			119	190			9	20			1	0	
	Arts and sciences				14	4			103	137			9	20							
	Graduate								3	0							1	0			
	Special								54	104											
	Summer school (1917)								15	36											
Warrenton	Central Wesleyan College	Coed	M. E.	1864			18	6			154	150			14	7					
	Arts and sciences				12	2			70	45			14	7							
	Special				2	7			57	114											
	Theology				4	0			34	0											
	Summer school (1917)				8	0			27	68											
Webster Groves	Kenrick Seminary	Men	R. C				12	0			196	0			31	0					
	Theology				12	0			196	0			31	0							

[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or codeucational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MONTANA.																					
Bozeman	Montana State College of Agriculture and Mechanic Arts.	Coed	State	1893			59	22			388	294			16	20					1
	Preparatory				2	3			6	6											
	Arts and sciences				14	12			36	67			2	7							
	Special				19	2			154	22											
	Chemical engineering				2	0			8	0											
	Civil engineering				3	0			20	0			3	0							
	Electrical engineering				2	0			41	0			3	0							
	Mechanical engineering				7	0			15	0			4	0							
	Architectural engineering				1	0			10	1											
	Agriculture				16	0			57	0			4	0							
	Commerce				2	1			12	28											
	Vocational education				2	0			11	0											
	Home economics				0	6			0	80			0	15							
	Music				2	1			27	90											
	Summer school (1917)				11	9			0	176											
	Short winter course				15	5			166	112											
	Military drill								363	0											
Butte	Montana State School of Mines	Coed	State	1900			7	0			51	1			3	0					
	Mining engineering				7	0			51	1			3	0							
	Extension courses				1	0			0	40											
Missoula	University of Montana	Coed	State	1895			46	10			272	388			15	41			2	0	
	Arts and sciences				37	9			152	277			10	35							
	Graduate								6	9							2	0			
	Special				3	1			30	58											
	Forestry				4	0			37	0			1	0							
	Journalism				2	0			10	29			1	3							
	Law				4	0			26	6			1	3							
	Pharmacy				2	0			11	9			2	0							
	Summer school (1917)				27	7			53	226											

	Short winter course								10	0											
	Extension course								3	74											
	Correspondence courses								9	30											
	Military drill								138	0											
NEBRASKA.																					
College View	Union College	Coed	S. D. Ad.	1891			13	5			202	241			9	7					
	Preparatory				2	5			77	108											
	Arts and sciences				11	5			52	66			9	7							
	Special								15	17											
	Commerce								8	7											
	Education								3	26											
	Music								7	17											
	Theology				5	1			40	0											
	Summer school (1917)				8	5			18	96											
Crete	Doane College	Coed	Cong	1872			10	8			59	107			3	7					
	Arts and sciences				9	5			44	63			3	6							
	Special								4	15											
	Music				1	3			28	67			0	1							
Hastings	Hastings College	Coed	Presb	1882			10	8			85	150			5	9					2
	Preparatory				2	3			13	14											
	Arts and sciences				7	4			52	108			5	9							
	Music				1	1			22	101											
	Summer school (1917)				6	3			7	60											
Lincoln	University of Nebraska	Coed	State	1871			229	58			2,094	1,934			206	202			28	18	1
	Preparatory				30	18			67	188											
	Arts and sciences				94	40			774	1,004			89	159							
	Graduate				70	8			127	175							28	18			
	Special								121	256											
	Chemical engineering								4	0											
	Civil engineering				3	0			101	0			6	0							
	Electrical engineering				3	0			80	0			8	0							
	Mechanical engineering				2	0			55	0			6	0							
	Agricultural engineering				5	0			7	0			3	0							
	Architectural engineering								5	0			1	0							
	Agriculture				57	1			221	0			32	0							
	Commerce				23	6			142	16			11	0							
	Education				24	12			19	397											
	Home economics				0	13			0	253			0	34							
	Fine arts				17	14			16	110			0	2							
	Law				9	0			113	2			17	0							
	Medicine				51	0			276	9			23	1							
	Pharmacy				16	2			31	9			10	6							
	Summer school (1917)				39	16			190	466											
	Short winter course				20	0			164	1											
	Correspondence courses				19	12			189	128											
	Military drill								651	0											
Omaha	Creighton University	Men	R. C.	1878			132	0			775	0			49	0					1
	Preparatory				22	0			320	0											
	Arts and sciences				14	0			159	0			4	0							
	Law				15	0			97	0			2	0							
	Medicine				58	0			84	0			16	0							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
NEBRASKA—contd.																					
Omaha	Creighton University—Continued.																				
	Dentistry				23	0			115	0			27	0							
	Summerschool (1917)				16	1			15	210											
	Military drill								350	0											
Do	Presbyterian Theological Seminary	Men	Presb	1891			5	0			35	0									
	Theology				5	0			35	0											
Do	University of Omaha	Coed	Nonsect	1909			8	8			58	113			5	5					
	Preparatory				3	8			9	10											
	Arts and sciences				3	8			49	103			5	5							
	Summer school (1917)				3	4			23	45											
University Place	Nebraska Wesleyan University	Coed	M. E.	1887			21	12			215	588			22	24					2
	Preparatory				5	5			28	23											
	Arts and sciences				16	7			147	279			22	24							
	Graduate								2	4											
	Special				5	7			21	139											
	Education				2	7			24	209											
	Summer school (1917)				8	5			39	195											
York	York College	Coed	U. B	1890			12	10			208	274			4	11					
	Preparatory				0	1			27	25											
	Arts and sciences				7	2			40	47			4	11							
	Commerce				3	3			135	157											
	Home economics				0	1			0	10											
	Fine arts				0	1			0	10											
	Music				1	2			5	51											
	Expression				1	0			1	4											
	Summer school (1917)				3	4			10	60											
	Correspondence courses								3	0											
	Military drill								50	0											

NEVADA.																					
Reno	University of Nevada	Coed	State	1886			38	10			154	170			6	15			1	1	
	Arts and sciences				26	7			53	112			4	15							
	Graduate								8	8							0	1			
	Civil engineering								18	0			1	0			1	0			
	Mechanical engineering				21	2			40	0											
	Mining engineering				3	0			27	0											
	Agriculture				26	6			18	0			1	0							
	Education				3	0			0	42											
	Home economics				0	2			0	8											
	Summer school (1917)				6	7			14	87											
	Short winter course								17	0											
	Military drill								109	0											
NEW HAMPSHIRE.																					
Durham	New Hampshire College of Agriculture and Mechanic Arts.	Coed	State	1868			54	8			399	163			47	20			1	0	3
	Arts and sciences				38	5			178	94			11	20			1	0			
	Special								4	4											
	Chemical engineering				4	0			49	1			6	0							
	Electrical engineering				2	0			58	0			4	0							
	Mechanical engineering				4	0			32	0			2	0							
	Agriculture				14	0			105	0			23	0							
	Forestry				2	0			3	0			1	0							
	Education				1	0			60	90											
	Home economics				0	3			0	64											
	Military drill								390	0											
Hanover	Dartmouth College	Men	Nonsect.	1769			122	0			1,060	0			274	0			6	0	6
	Arts and sciences				95	0			999	0			274	0							
	Graduate								1	0							1	0			
	Civil engineering				6	0			20	0							5	0			
	Commerce				9	0			28	0											
	Medicine				12	0			31	0											
	Summer school (1917)				32	8			72	156											
	Military drill								450	0											
Manchester	St. Anselm's College	Men	R. C.				16	0			153	0			8	0					
	Preparatory				16	0			107	0											
	Arts and sciences				7	0			46	0			7	0							
	Fine arts				1	0			4	0											
	Theology				4	0			12	0			1	0							
NEW JERSEY.																					
Bloomfield	Bloomfield Theological Seminary	Men	Presb	1869			15	1			74	0									2
	Theology				15	1			74	0											
Convent Station	College of St. Elizabeth	Women	R. C.				3	63			0	425			0	42			0	1	
	Preparatory				3	40			0	250											
	Arts and sciences				3	23			0	175			0	42			0	1			
	Commerce				0	5			0	25											
	Journalism				0	6			0	40											
	Education				1	5			0	30											
	Home economics				0	3			0	25											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
NEW JERSEY—con.																					
Convent station	College of St. Elizabeth—Continued.																				
	Fine arts				2	6			0	150			0	2							
	Summer school (1917)				0	10			0	100											
	Correspondence courses				5	0			0	50											
Hoboken	Stevens Institute of Technology	Men	Nonsect.	1871			47	0			520	0			66	0					1
	Mechanical engineering				47	0			520	0			66	0							
	Military drill								520	0											
Jersey City	St. Peter's College	Men	R. C.	1878			11	0			88	0			11	0					7
	Arts and sciences				11	0			88	0			11	0							
Kenilworth	Upsala College	Coed	Luth.	1893			13	2			56	36			2	3					
	Preparatory				10	2			31	13											
	Arts and sciences				8	0			17	6			2	3							
	Special				1	0			6	5											
	Music				2	0			11	20											
Madison	Drew Theological Seminary	Coed	M. E.	1867			15	0			96	1			30	0			2	0	
	Theology				15	0			96	1			30	0			2	0			
Newark	New Jersey Law School	Coed	Nonsect.				7	0			164	18			30	4					
	Law				7	0			164	18			30	4							
New Brunswick	Rutgers College	Men	Nonsect.	1766			70	1			519	1			46	0			8	1	8
	Preparatory				6	1			72	0											
	Arts and sciences				64	0			172	0			23	0							
	Graduate								9	1							7	1			
	General engineering								98	0											
	Chemical engineering								48	0			6	0							
	Civil engineering								26	0			1	0			1	0			
	Electrical engineering								17	0			4	0							
	Mechanical engineering								17	0											
	Ceramics								3	0											
	Agriculture								56	0			12	0							

	Summer School (1917)				31	23			88	407											
	Short winter course				21	2			76	17											
	Military drill								325	0											
Do.	Theological Seminary of the Reformed Church.	Men	Ref.	1784			10	0			22	0									
	Theology				10	0			22	0											
Princeton	Princeton Theological Seminary	Men	Presb.				7	0			150	0									
	Theology				7	0			150	0											
Do.	Princeton University	Men	Nonsect.	1746			184	0			972	0			90	0			34	0	8
	Arts and sciences				184	0			884	0			82	0							
	Graduate								74	0							34	0			
	Special								14	0											
	Civil engineering								62	0			8	0							
	Summer school (1917)								148	0											
	Military drill								884	0											
NEW MEXICO.																					
Albuquerque	University of New Mexico	Coed	State	1891			20	4			111	134			4	6					
	Preparatory								7	4											
	Arts and sciences				20	4			78	99			4	6							
	Special								26	31											
Socorro	New Mexico School of Mines	Coed	State	1895			6	0			19	0									
	Preparatory				1	0			2	0											
	Civil engineering				1	0			1	0											
	Mining engineering				2	0			9	0											
	Geological engineering				1	0			2	0											
	Metallurgical engineering				1	0			6	0											
State College	New Mexico College of Agriculture and Mechanic Arts.	Coed	State	1890			33	7			142	68			3	4					
	Preparatory				12	4			118	48											
	Graduate								1	0											
	Special				0	1			1	4											
	Civil engineering				1	0			3	0											
	Electrical engineering				1	0			6	0											
	Mechanical engineering				3	0			6	0											
	Irrigation engineering				1	0			1	0											
	Agriculture				15	0			26	0			3	0							
	Home economics				0	2			0	16			0	4							
	Military drill								169	0											
NEW YORK.																					
Albany	New York State College for Teachers	Coed	State				32	25			178	894			13	135			0	3	
	Preparatory				1	5			50	180											
	Arts and sciences				31	20			114	677			13	135							
	Graduate								5	5							0	3			
	Special								9	32											
	Summer school (1917)								35	218											
	Extension courses								13	54											
Alfred	Alfred University	Coed	Nonsect.	1836			14	5			46	77			4	11					
	Arts and sciences				14	5			38	67			4	11							
	Special								8	10											
	Theology				2	0			14	12											
	Military drill								33	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917-18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
NEW YORK—contd.																					
Annandale	St. Stephen's College	Men	Epis.	1860			9	0			32	0			4	0					
	Arts and sciences				9	0			32	0			4	0							
Auburn	Auburn Theological Seminary	Coed	Presb.	1819			13	0			55	1									
	Theology				13	0			55	1											
	Summer school (1917)				17	5			62	71											
Aurora	Wells College	Women	Nonsect.	1868			11	26			0	233			0	38					
	Arts and sciences				11	26			0	233			0	38							
Brooklyn	Adelphi College	Women	Nonsect.	1896			16	12			0	278			0	77					
	Arts and sciences				16	12			0	267			0	77							
	Graduate								0	2											
	Special								0	9											
	Summer school (1917)				13	2			14	77											
	Extension courses				11	4			14	167											
Do.	Brooklyn College of Pharmacy	Coed	Nonsect.	1891			14	0			390	56			146	19					
	Pharmacy				14	0			390	56			146	19							
Do.	College of St. Francis Xavier	Men	R. C.	1847			26	0			466	0			16	0					
	Preparatory				14	0			400	0											
	Arts and sciences				12	0			66	0			16	0							
	Military								240	0											
Do.	Long Island College Hospital	Coed	Nonsect.	1859			114	1			339	6			46	0					
	Medicine				114	1			339	6			46	0							
Do.	Polytechnic Institute of Brooklyn	Men	Nonsect.	1854			35	0			816	0			56	0			5	0	
	General engineering				8	0			168	0											
	Chemical engineering				7	0			219	0			19	0							
	Civil engineering				10	0			159	0			18	0			4	0			
	Electrical engineering				3	0			138	0			5	0							
	Mechanical engineering				7	0			132	0			14	0			1	0			
	Military drill								40	0											

Buffalo	Canisius College	Men	R. C.	1870			13	0			157	0			30	0			10	0	4
	Arts and sciences				13	0			144	0			30	0							
	Graduate								10	0							10	0			
	Special								3	0											
Do.	D'Youville College	Women	R. C.				6	35			0	201			0	17			0	3	
	Preparatory				0	13			0	120											
	Arts and sciences				6	12			0	61			0	17							
	Graduate								0	20							0	3			
	Music				0	10			0	40											
	Summer school (1917)				8	7			0	105											
	Extension courses				2	7			0	45											
Do.	University of Buffalo	Coed	Nonsect.				200	7			778	175			185	14			2	0	
	Arts and sciences				16	2			90	121											
	Law				24	0			114	10			31	1							
	Medicine				104	3			196	19			22	4							
	Dentistry				41	0			274	4			98	1							
	Pharmacy				28	2			104	21			34	8			2	0			
Canton	St. Lawrence University	Coed	Nonsect.	1858			42	10			373	204			70	32					8
	Arts and sciences				14	3			96	104			13	25							
	Agriculture (secondary)				10	7			54	50											
	Theology				3	0			14	4			3	0							
	Law				15	0			209	46			54	7							
Clinton	Hamilton College	Men	Nonsect.	1812			23	0			202	0			25	0			4	0	2
	Arts and sciences				23	0			202	0			25	0			4	0			
	Summer school (1917)				3	4			3	62											
	Military drill								140	0											
Elmira	Elmira College	Women	Nonsect.	1853			9	22			0	309			0	57			0	1	
	Arts and sciences				9	22			0	309			0	57			0	1			
Esopus	Mt. St. Alphonsus Theological Seminary	Men	R. C.	1867			11	0			114	0			16	0					
	Theology				11	0			114	0			16	0							
Geneva	De Lancy Divinity School	Men	P. E.	1856			7	0			7	0									
	Preparatory				2	0			2	0											
	Graduate								2	0											
	Theology				7	0			7	0											
Do.	Hobart College	Coed	Nonsect.	1822			20	3			76	80			10	19			1	0	
	Arts and sciences				20	3			76	80			10	19			1	0			
Hamilton	Colgate University	Men	Nonsect.	1819			51	0			484	0			66	0					7
	Arts and sciences				39	0			434	0			65	0							
	Theology				17	0			57	0			1	0							
	Military drill								400	0											
Hartwick Seminary	Hartwick Seminary	Men	Luth.	1797			4	0			10	0									1
	Theology				4	0			10	0											
Ithaca	Cornell University	Coed	Nonsect.	1868			736	60			3,240	842			440	149			63	18	
	Arts and sciences				224	13			835	427			95	84							
	Graduate								226	52							45	15			
	Civil engineering				24	0			259	1			42	0			1	0			
	Mechanical engineering				81	0			686	4			57	0							
	Agriculture				202	35			759	309			140	59			16	2			
	Architecture				12	1			83	8			13	0			1	1			
	Law				6	0			179	14			11	2							
	Medicine				161	11			167	43			28	4							
	Veterinary medicine				26	0			108	0			54	0							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduat degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
NEW YORK—contd.																					
Ithaca	Cornell University—Continued.																				
	Summer school (1917)								604	943											
	Short winter course								151	39											
	Military drill								1,760	0											
New Rochelle	College of New Rochelle	Women	R. C.	1904			14	28			0	302			0	43					
	Arts and sciences				9	17			0	228			0	43							
	Special								0	6											
	Commerce				1	1			0	2											
	Education				1	4			0	75											
	Home economics				0	1			0	100											
	Music				3	5			0	30											
	Summer school (1917)				5	14			0	68											
New York	Barnard College	Women	Nonsect.	1889			60	43			0	697			0	157					
	Arts and sciences				60	43			0	697			0	157							
Do	Bible Teachers' Training School	Coed	Nonsect.	1901			12	4			109	147									
	Religious education								5	3											
	Missions								19	26											
	Bible teachers								59	118											
	Theology				12	4			26	0											
Do	College of the City of New York	Men	City	1849			273	1			4,756	311			278	0					
	Preparatory				64	0			1,659	0											
	Arts and sciences				177	0			3,077	[1] 311			278	0							
	Special				5	1			20	0											
	Chemical engineering				17	0			192	0											
	Civil engineering				5	0			130	0											
	Electrical engineering				4	0			105	0											
	Mechanical engineering				1	0			10	0											
	Summer school (1917)				78	0			1,404	580											
	Extension courses				53	5			504	3,696											
	Military drill								1,421	0											

Do	Columbia University	Coed	Nonsect	1854			880	3			3,365	674			532	20			222	163	10
	Arts and sciences				131	0			1,315	0			212	0							
	Graduate				206	2			582	577							219	163			
	Chemical engineering				[2] 90	0			30	0			3	0							
	Civil engineering								10	0			8	0							
	Electrical engineering								8	0			3	0							
	Mechanical engineering								9	0											
	Mining engineering								17	0			9	0							
	Metallurgical engineering								5	0			1	0							
	Architecture				11	0			36	0			1	0							
	Commerce				16	0			60	17			2	2							
	Journalism				22	0			42	34			8	11							
	Law				15	0			219	0			54	0			3	0			
	Medicine				355	0			545	9			118	0							
	Dentistry				15	0			([3])												
	Pharmacy				17	1			487	37			113	7							
	Summer school (1917)				288	113			2,008	4,141											
	Extension courses				298	47			2,223	3,039											
	Military drill								535	0											
Do	Fordham University	Men	R. C.	1841			179	1			1,337	10			223	0			15	3	8
	Preparatory				24	0			461	0											
	Arts and sciences				21	0			309	0			34	0							
	Graduate				13	0			25	10							15	3			
	Special								27	0											
	Law				12	0			406	0			80	0							
	Medicine				130	1			297	0			62	0							
	Pharmacy				14	0			97	0			47	0							
	Sociology and social service				12	2			129	468											
Do	General Theological Seminary of the Protestant Episcopal Church	Men	P. E.	1817			16	0			82	0			11	0					
	Theology				16	0			82	0			11	0							
Do	Hunter College of the City of New York	Women	City	1870			17	169			0	3,546			0	291					
	Preparatory				0	64			0	1,749											
	Arts and sciences				17	105			0	1,752			0	291							
	Special								0	45											
	Summer school (1917)				6	25			0	261											
Do	Jewish Theological Seminary	Coed	Jewish	1886			14	0			3	73			25	0					
	Theology				9	0			83	0			13	0							
	Teacher's institute				8	0			51	73			12	0							
Do	Manhattan College	Men	R. C.	1853			23	0			261	0			20	0			1	0	5
	Preparatory				12	0			167	0											
	Arts and sciences				11	0			92	0			13	0							
	Graduate								2	0							1	0			
	Civil engineering								49	0			7	0							
Do	New York College of Dentistry	Men	Nonsect.	1866			64	0			689	0			234	0					
	Dentistry				64	0			689	0			234	0							
Do	New York University	Coed	Nonsect.	1832			411	12			5,742	1,206			532	45			76	22	8
	Arts and sciences				100	0			281	296			59	23							
	Graduate				56	0			233	86							49	15			
	Chemical engineering								138	0			13	0							

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[1] Evening session.

[2] Engineering faculty.

[3] Included in medicine.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
NEW YORK—contd.																					
New York	New York University—Continued.																				
	Civil engineering				53	0			79	0			13	0			8	0			
	Mechanical engineering								65	0			5	0			1	0			
	Commerce				100	2			2,957	506			204	10			2	1			
	Journalism				8	0			(243)												
	Pedagogy				15	4			98	157			3	1							
	Law				26	3			589	161			126	11			16	6			
	Medicine				142	3			1,273	0			92	0							
	Veterinary medicine				19	0			29	0			17	0							
	Summer school (1917)				81	40			345	627											
	Extension courses				48	18			(2,295)												
	Military drill								595	0											
Do	Teachers College	Coed	Nonsect	1888			95	142			451	1,934			36	309			148	181	
	Graduate				85	126			302	476							148	181			
	Education and practical arts				68	139			149	1,458			36	309							
	Extension								35	558											
Do	Union Theological Seminary	Coed	Nonsect	1836			24	0			197	63			20	2			1	0	
	Theology				24	0			197	63			20	2			1	0			
Potsdam	Clarkson College of Technology	Men	Nonsect	1896			9	0			79	0			17	0					
	General engineering				4	0			27	0											
	Chemical engineering				2	0			6	0			1	0							
	Civil engineering				1	0			19	0			7	0							
	Electrical engineering				1	0			14	0			5	0							
	Mechanical engineering				1	0			13	0			4	0							
	Military drill								79	0											
Poughkeepsie	Vassar College	Women	Nonsect	1865			25	114			0	1,129			0	275			0	1	
	Arts and sciences				25	114			0	1,125			0	275							
	Graduate								0	4							0	1			

Rochester	Rochester Theological Seminary	Men	Bapt	1850			9	0			59	0			9	0					
	Theology				9	0			59	0			9	0							
Do	University of Rochester	Coed	Nonsect.	1850			41	3			264	271			35	55			1	2	3
	Arts and sciences				41	3			248	252			35	55							
	Graduate								4	5							1	2			
	Special								12	14											
	Extension courses								18	159											
	Military drill								200	0											
St. Bonaventure	St. Bonaventure's College	Men	R. C.	1859			35	0			238	0			34	0			5	0	4
	Preparatory				18	0			81	0											
	Arts and sciences				18	0			87	0			19	0			5	0			
	Theology				10	0			70	0			15	0							
	Military drill								168	0											
Schenectady	Union University	Men	Nonsect.	1795			136	2			999	7			142	0			6	0	4
	Arts and sciences				43	0			413	0			24	0							
	Graduate				5	0			42	0							2	0			
	Special				11	0			189	0											
	General engineering				6	0			117	0											
	Chemical engineering				3	0			14	0											
	Civil engineering				6	0			19	0			9	0							
	Electrical engineering				5	0			43	0			17	0			4	0			
	Law				16	0			174	5			43	0							
	Medicine				65	1			80	1			11	0							
	Pharmacy				12	1			90	1			38	0							
	Military drill								150	0											
Syracuse	New York State College of Forestry (at Syracuse University).	Men	State				24	0			128	0			4	0			2	0	
	Forestry				24	0			128	0			4	0			2	0			
Do	Syracuse University	Coed	Nonsect.	1871			276	39			1,498	1,619			151	199			14	7	14
	Arts and sciences				86	16			611	809			61	139							
	Graduate				67	2			77	134							14	7			
	Special				0	3			260	513											
	Chemical engineering								21	0			1	0							
	Civil engineering								43	0			11	0							
	Electrical engineering								83	0			12	0							
	Mechanical engineering								64	0			13	0							
	Agriculture				8	0			61	25			8	0							
	Architecture				4	0			30	3			2	0							
	Education				4	8			1	70			0	14							
	Fine arts				3	3			12	25			0	5							
	Music				16	5			16	124			1	15							
	Law				19	0			108	7			21	1							
	Medicine				86	0			114	8			21	3							
	Library science				1	3			0	59			0	11							
	Oratory				4	3			1	48			0	11							
	Summer school (1917)				53	3			109	236											
	Short winter course				8	0			8	0											
	Military drill								300	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
NEW YORK—contd.																					
Troy	Rensselaer Polytechnic Institute	Men	Nonsect.	1824			57	0			623	0			68	0			1	0	5
	Graduate								4	0							1	0			
	Special								85	0											
	General science								4	0											
	Chemical engineering								143	0			8	0							
	Civil engineering								176	0			27	0							
	Electrical engineering								134	0			22	0							
	Mechanical engineering								127	0			11	0							
	Summer school (1917)				10	0			198	0											
	Military drill								205	0											
Do	Russell Sage College	Women	Nonsect.	1917			1	18			0	150									
	Arts and sciences				0	18			0	150											
	Commerce				1	3			0	91											
	Home economics				0	4			0	49											
	Fine arts				0	1			0	9											
West Point	United States Military Academy	Men	Nat'l	1802			128	0			857	0									
	Arts and sciences				128	0			857	0											
NORTH CAROLINA.																					
Asheville	St. Genevieve's College	Women	R. C.	1909			2	18			0	85									
	Preparatory				0	8			0	52											
	Arts and sciences				2	10			0	21											
	Graduate								0	2											
	Special								0	10											
Belmont	Belmont Abbey College	Men	R. C.	1878			18	0			99	0									
	Arts and sciences				18	0			60	0											
	Commerce								25	0											
	Theology								14	0											
Chapel Hill	University of North Carolina	Coed	State	1795			93	0			842	24			81	8			7	2	5

	Arts and sciences				59	0			531	11			62	8							
	Graduate				33	0			21	4							6	2			
	Special								50	5											
	Chemical engineering								51	0			4	0							
	Civil engineering								20	0			2	0							
	Electrical engineering								33	0			1	0							
	Law				3	0			54	3			3	0							
	Medicine				16	0			57	0											
	Pharmacy				13	0			25	1			9	0			1	0			
	Summer school (1917)				46	16			209	792											
	Extension courses								205	25											
	Correspondence courses								20	5											
	Military drill								560	0											
Charlotte	Biddle University (colored)	Men	Presb.	1868			16	0			265	0			34	0			8	0	3
	Preparatory				6	0			134	0											
	Arts and sciences				6	0			111	0			30	0			8	0			
	Theology				4	0			20	0			4	0							
Davidson	Davidson College	Men	Presb.	1837			16	0			321	0			43	0			1	0	
	Arts and sciences				16	0			319	0			43	0							
	Graduate								2	0							1	0			
	Military drill								200	0											
Durham	Trinity College	Coed	M. E. So.	1859			33	0			352	116			42	23			2	1	1
	Arts and sciences				30	0			337	113			42	23							
	Graduate								2	3							2	1			
	Law				3	0			14	0											
	Extension courses				1	0			20	82											
	Military drill								175	0											
Elon College	Elon College	Coed	Chris.	1890			19	6			201	199			11	18			1	0	
	Preparatory				3	0			70	86											
	Arts and sciences				12	0			131	113			11	18			1	0			
	Commerce				1	0			26	34											
	Education				1	0			91	77											
	Home economics				0	1			0	9											
	Fine arts				0	1			25	2											
	Music				3	3			22	86											
	Expression				1	1			6	16											
	Theology				2	0			24	0											
	Military drill								79	0											
Greensboro	Greensboro College for Women	Women	M. E. So.	1846			4	11			0	271									
	Preparatory				0	3			0	35											
	Arts and sciences				0	5			0	137											
	Special				4	3			0	99											
Guilford College	Guilford College	Coed	Friends	1837			15	7			106	139			11	10					
	Preparatory				5	3			34	11											
	Arts and sciences				10	4			66	71			10	10							
	Education								4	13											
	Home economics								0	18											
	Music								2	26			1	0							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
NORTH CAROLINA—continued.																					
Lenoir	Davenport College[1]	Women.	M. E. So.	1858			0	20			0	130									
	Preparatory				0	14			0	55											
	Arts and sciences				0	6			0	60											
	Special								0	20											
	Education								0	75											
	Home economics								0	30											
	Fine arts								0	80											
	Music								0	60											
Louisburg	Louisburg Female College[1]	Women.	M. E. So.				1	15			0	140									
	Preparatory				0	5			0	30											
	Arts and sciences				1	10			0	110											
	Education				0	3			0	8											
	Home economics				0	1			0	10											
	Fine arts				0	1			0	30											
	Music				0	4			0	75											
Raleigh	Meredith College	Women.	Bapt.	1899			4	23			0	337			0	28					
	Arts and sciences				3	13			0	170			0	23							
	Special								0	81											
	Home economics				0	2			0	62											
	Fine arts				0	2			0	10											
	Music				1	6			0	76			0	5							
Do	Peace Institute	Women.	Presb.	1858			0	19			0	188									
	Preparatory				0	10			0	52											
	Arts and sciences				0	10			0	51											
	Special				2	9			0	76											
	Commerce				0	1			0	16											
	Home economics				0	1			0	32											

	Fine arts				0	2			0	20											
	Music				0	5			0	50											
Do	Shaw University (colored)	Coed	Bapt.	1865			17	10			151	148			7	0					
	Preparatory				10	9			103	125											
	Arts and sciences				5	1			44	9			6	0							
	Special								2	14											
	Theology				2	0			19	0			1	0							
Red Springs	Flora Macdonald College	Women	Presb.	1896			3	25			0	289			0	13					
	Preparatory				0	6			0	123											
	Arts and sciences				2	12			0	105			0	13							
	Special				1	9			0	61											
	Commerce				0	1			0	33											
	Home economics				0	3			0	162											
	Fine arts				0	1			0	24											
	Music				1	8			0	167											
Wake Forest	Wake Forest College	Men	Bapt.	1834			27	0			387	0			63	0			12	0	
	Arts and sciences				27	0			387	0			52	0			12	0			
	Special								48	0											
	Law				3	0			49	0			11	0							
	Medicine				5	0			35	0											
	Military drill								250	0											
Weaverville	Weaver College [1]	Coed	M. E. So.				4	4			92	81									
	Preparatory				4	4			80	74											
	Arts and sciences				4	4			12	7											
West Raleigh	North Carolina College of Agriculture and Engineering.	Men	State	1889			67	0			552	0			49	0			3	0	
	Arts and sciences				64	0			448	0											
	Graduate								16	0											
	Special								53	0											
	Chemical engineering				3	0			24	0											
	Civil engineering				2	0			59	0			7	0							
	Electrical engineering				2	0			85	0			8	0							
	Mechanical engineering				5	0			52	0			6	0			1	0			
	Textile engineering				3	0			66	0			5	0							
	Agriculture				18	0			178	0			23	0			2	0			
	Architecture				1	0			20	0											
	Education				1	0			15	0											
	Summer school (1917)								485	0											
	Short winter course								35	0											
	Extension courses								77	0											
	Military drill								500	0											
Wilson	Atlantic Christian College	Coed	Chris.				9	8			52	93									
	Preparatory				2	3			27	54											
	Arts and sciences				5	2			23	32											
	Special				1	3			2	7											
	Home economics								0	13											
	Music								1	31											
	Theology				2	0			18	3											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
NORTH DAKOTA.																					
Agricultural College	North Dakota Agricultural College	Coed	State	1890			50	22			480	242			16	9			1	0	
	Preparatory				39	11			214	68											
	Arts and sciences				42	11			141	91			3	3							
	Graduate				12	0			6	2							1	0			
	Special								6	5											
	Chemical engineering				1	0			9	0											
	Civil engineering				1	0			5	0											
	Mechanical engineering				5	0			13	0			1	0							
	Architectural engineering				1	0			1	0											
	Agriculture				6	0			50	1			6	0							
	Education				2	0			6	8			1	0							
	Home economics				0	5			0	65			0	6							
	Veterinary medicine				3	0			11	0											
	Pharmacy				2	0			18	2			5	0							
	Summer school (1917)				10	2			42	94											
	Short winter course				20	12			168	6											
	Military drill								207	0											
Fargo	Fargo College	Coed	Nonsect	1887			14	17			183	419			9	11					
	Preparatory				2	4			9	28											
	Arts and sciences				10	4			41	60			8	11							
	Special								1	11											
	Music				3	10			133	353			1	0							
	Summer school (1917)								13	2											
	Military drill								30	0											
Jamestown	Jamestown College	Coed	Presb	1883			12	5			67	101									
	Preparatory				4	3			25	9											
	Arts and sciences				8	2			29	63											
	Special								2	5											
	Commerce								14	12											

	Home economics								0	20											
	Music								4	38											
	Summer school (1917)				6	5			13	56											
University	University of North Dakota	Coed	State	1884			68	15			356	446			49	82			4	3	1
	Preparatory				5	8			44	49											
	Arts and sciences				44	11			129	136			21	46							
	Graduate				9	0			8	5							4	3			
	Special								20	23											
	General engineering				12	1			37	0											
	Civil engineering								12	0			5	0							
	Electrical engineering								12	0			7	0							
	Mechanical engineering								3	0			2	0							
	Mining engineering								13	0			2	0							
	Ceramics								0	11											
	Commerce				5	0			30	8											
	Journalism				2	0			10	25											
	Education				7	5			20	217			5	35							
	Home economics				0	4			0	79											
	Fine arts				0	2			7	145											
	Music				2	1			111	74											
	Law				5	0			30	8			1	1							
	Medicine				9	0			28	2			6	0							
	Summer school (1917)				12	3			55	234											
	Extension courses				59	0			89	500											
	Correspondence courses								83	104											
	Military drill								152	0											
OHIO.																					
Ada	Ohio Northern University	Coed	M. E.	1871			28	5			512	441			80	10					
	Preparatory				4	1			56	16											
	Arts and sciences				11	0			66	25			9	6							
	Special								9	4											
	Chemical engineering				1	0			13	2			1	0							
	Civil engineering				1	0			73	0			15	0							
	Electrical engineering				1	0			88	0			8	0							
	Mechanical engineering				1	0			39	0			7	0							
	Commerce				2	1			36	16			14	0							
	Education				1	1			76	303											
	Music				2	1			8	83			0	8							
	Expression				0	1			1	8											
	Law				3	0			39	2			8	0							
	Pharmacy				3	0			37	1			18	1							
Akron	Municipal University of Akron	Coed	City	1872			27	5			377	229			14	8					
	Arts and sciences				17	5			139	69			13	6							
	Evening courses				9	1			183	120											
	Graduate								3	3											
	Civil engineering				5	0			16	0			1	0							
	Electrical engineering								3	0											
	Mechanical engineering								16	0											
	Manufacturing production								17	0											
	Home economics								0	37			0	2							
	Military drill								150	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OHIO—continued.																					
Alliance	Mount Union College	Coed	M. E.	1846			19	8			196	180			12	10					5
	Preparatory								6	4											
	Arts and sciences				17	6			173	133			12	10							
	Music				2	2			17	43											
	Summer school (1917)								19	55											
	Military drill								198	0											
Athens	Ohio University	Coed	State	1808			50	13			259	652			29	69					8
	Preparatory								34	40											
	Arts and sciences				30	13			187	210			22	25							
	Education				20	13			38	402			17	44							
	Summer school (1917)				58	30			351	1,365											
	Extension courses				6	0			186	1,294											
Berea	Baldwin-Wallace College	Coed	M. E.	1864			46	9			516	210			85	26					
	Preparatory				7	2			154	24											
	Arts and sciences				20	3			132	95			27	19							
	Home economics				0	1			0	28											
	Music				4	3			52	115											
	Theology				3	0			20	2											
	Law				15	0			218	24			58	7							
	Summer school (1917)				5	4			21	34											
	Military drill								118	0											
Bluffton	Bluffton College	Coed	Mennon.				22	7			99	241			5	11			2	0	
	Preparatory				4	1			6	7											
	Arts and sciences				18	6			57	96			3	11							
	Graduate								6	0							2	0			
	Special								28	140											
	Education								10	17											
	Home economics								0	10											
	Fine arts								0	12											

	Music								24	137											
	Theology				3	0			10	6			2	0							
	Summer school (1917)				4	3			19	86											
Cedarville	Cedarville College	Coed	R. Presb	1894			10	4			29	54			7	5			0	2	3
	Preparatory				6	1			1	2											
	Arts and sciences				6	4			24	26			5	5							
	Graduate				5	1			1	3							0	2			
	Special				0	3			8	30											
	Theology				4	0			10	0			2	0							
Cincinnati	Cincinnati College of Pharmacy	Coed	Nonsect	1850			7	0			11	2									
	Pharmacy				7	0			11	2											
Do	Cincinnati Veterinary College	Men	Nonsect	1900			20	0			106	0			32	0					
	Veterinary medicine				20	0			106	0			32	0							
Do	Eclectic Medical College	Coed	Nonsect	1845			35	0			83	6			21	1					
	Medicine				35	0			83	6			21	1							
Do	Hebrew Union College	Men	Jewish	1875			9	0			60	0			12	0					
	Theology				9	0			60	0			12	0							
Do	Lane Theological Seminary	Men	Presb	1832			5	0			51	0									
	Theology				5	0			51	0											
Do	Mount St. Mary's Seminary of the West	Men	R. C				9	0			180	0			16	0					
	Theology				9	0			180	0			16	0							
Do	St. Xavier College	Men	R. C	1840			68	1			492	139			18	3					1
	Preparatory				24	0			377	0											
	Arts and sciences				10	0			63	0			18	3							
	Commerce				34	1			52	139											
Do	University of Cincinnati	Coed	City	1874			269	35			1,425	1,699			103	112			4	9	
	Arts and sciences				68	12			630	1,059			51	112							
	Graduate				61	2			49	82							4	9			
	General engineering				50	0			454	0											
	Chemical engineering				7	0			95	0			6	0							
	Civil engineering				6	0			126	0			13	0							
	Electrical engineering				4	0			111	0			5	0							
	Mechanical engineering				4	0			122	0			7	0							
	Commerce				19	1			233	48											
	Education				17	7			25	410											
	Home economics				1	10			0	92											
	Medicine				161	3			137	8			21	0							
	Correspondence courses								22	67											
	Military drill								626	0											
Cleveland	Case School of Applied Science	Men	Nonsect	1880			37	0			442	0			65	0			7	0	
	General engineering				17	0			187	0											
	Chemical engineering				5	0			85	0			13	0			2	0			
	Civil engineering				3	0			36	0			14	0							
	Electrical engineering				4	0			42	0			11	0			1	0			
	Mechanical engineering				5	0			79	0			22	0			3	0			
	Mining engineering				3	0			33	0			5	0			1	0			
	Summer school (1917)				12	0			99	0											
	Military drill								442	0											
Do	St. Ignatius College	Men	R. C	1886			29	0			514	0			10	0					
	Preparatory				20	0			441	0											
	Arts and sciences				14	0			73	0			10	0							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OHIO—continued.																					
Cleveland	St. Mary's Theological Seminary	Men	R. C			6	0			55	0										
	Theology				6	0			55	0											
Do	Western Reserve University	Coed	Nonsect	1826			226	38			873	560			199	104			4	1	1
	Arts and sciences				56	26			353	503			74	98							
	Graduate								6	4							4	1			
	Special								15	13											
	Education				2	0			0	103											
	Home economics				1	5			0	201											
	Music				2	0			0	37											
	Library school				5	7			0	28											
	School of applied and social sciences								1	38											
	Law				11	0			72	0			20	0							
	Medicine				111	0			181	0			44	0							
	Dentistry				30	0			192	8			26	2							
	Pharmacy				8	0			68	4			35	4							
	Summer school (1917)				19	6			(644)												
	Extension courses				31	8			(1,633)												
	Military drill								270	0											
Columbus	Capital University	Men	Luth	1850			19	1			248	0			20	0					
	Preparatory				12	0			81	0											
	Arts and sciences				14	1			102	0			20	0							
	Special								19	0											
	Education								4	0											
	Theology				5	0			53	0											
	Correspondence courses								8	0											
Do	Ohio State University	Coed	State	1872			399	48			3,123	1,373			347	212			47	20	
	Arts and sciences				293	48			894	578			68	76							
	Graduate								106	55							46	20			
	General engineering								36	0			3	0							
	Chemical engineering								168	0			15	0							

	Civil engineering								144	0			15	0							
	Electrical engineering								210	0			14	0							
	Mechanical engineering								170	0			10	0							
	Mining engineering								30	0			8	0							
	Architectural engineering								17	0			8	0							
	Ceramic engineering								65	0			7	0							
	Agriculture								606	2			54	0							
	Architecture								46	6			4	0			1	0			
	Commerce								86	15			10	3							
	Education								73	574			16	87							
	Home economics								0	217			0	45							
	Law				6	0			79	1			14	0							
	Medicine				69	0			151	10			37	0							
	Veterinary medicine				13	0			74	0			8	0							
	Dentistry				14	0			141	2			56	1							
	Pharmacy				3	0			68	13			5	0							
	Applied optics				1	0			10	2											
	Summer school (1917)								412	488											
	Short winter course								119	0											
	Military drill								1,625	0											
Dayton	Bonebrake Theological Seminary	Coed	U. B.	1871			6	0			40	17			5	0					
	Theology				6	0			40	17			5	0							
Do.	Central Theological Seminary	Coed	Ref.	1848			7	0			26	0									
	Theology				7	0			26	0											
Defiance	Defiance College	Coed	Christ.	1885			11	15			140	212			7	14					1
	Preparatory				1	5			19	25											
	Arts and sciences				9	7			87	102			7	14							
	Special				1	3			42	85											
	Summer school (1917)				11	7			80	140											
Delaware	Ohio Wesleyan University	Coed	M. E.	1844			50	23			312	552			53	87			0	1	10
	Arts and sciences				45	15			274	434			53	87							
	Graduate								1	8							0	1			
	Special								28	38											
	Fine arts				0	3			1	8											
	Music				5	5			9	72											
Findlay	Findlay College	Coed	C. of God	1882			8	11			150	346			4	7			0	1	
	Preparatory				1	2			11	12											
	Arts and sciences				5	3			33	27			4	7			0	1			
	Special				2	6			94	302											
	Theology								12	5											
	Summer school (1917)								4	10											
Gambier	Kenyon College	Men	P. E.	1824			20	0			130	0			13	0			5	0	8
	Arts and sciences				15	0			115	0			13	0			5	0			
	Theology				5	0			15	0											
	Military drill								110	0											
Hiram	Hiram College	Coed	Nonsect.	1850			14	6			113	126			14	23					
	Arts and sciences				12	5			113	119			14	23							
	Special				2	1			0	7											
Marietta	Marietta College	Coed	Nonsect.	1800			16	0			139	75			19	11			1	0	1
	Arts and sciences				16	0			135	54			19	11							
	Graduate								1	1							1	0			
	Special								3	20											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OHIO—continued.																					
New Concord	Muskingum College	Coed	U. Presb.	1836			24	13			299	455			25	24					4
	Preparatory				5	6			77	94											
	Arts and sciences				16	6			181	153			25	24							
	Fine arts				0	1			0	10											
	Music				3	0			41	198											
	Summer school (1917)				9	9			94	178											
	Military drill								75	0											
Oxford	Miami University	Coed	State	1824			50	24			327	508			39	42					
	Arts and sciences				34	2			289	110			34	16							
	Education				16	22			38	398			5	26							
	Summer school (1917)				36	11			102	501											
	Extension courses								167	418											
	Military drill								327	0											
Do	Oxford College for Women	Women	Nonsect.	1830			1	20			0	176			0	17					
	Arts and sciences				0	16			0	146			0	12							
	Music				1	4			0	30			0	5							
Do	Western College for Women	Women	Nonsect.	1855			5	29			0	270			0	40					
	Arts and sciences				3	24			0	267			0	40							
	Music				2	5			0	63											
Painesville	Lake Erie College	Women	Nonsect.	1859			1	20			0	139			0	21					
	Arts and sciences				1	20			0	132			0	21							
	Special								0	7											
Rio Grande	Rio Grande College	Coed	F. Bapt.	1876			6	3			66	240			6	1					1
	Preparatory				3	2			40	180											
	Arts and sciences				3	1			26	60			6	1							
	Summer school (1917)				7	5			100	101											
Springfield	Wittenberg College	Coed	Luth.	1845			23	7			258	225			23	29			6	0	6
	Preparatory				3	4			29	20											
	Arts and sciences				15	3			180	140			23	29							

	Graduate								8	1							0	0			
	Special								22	64											
	Theology				5	0			29	0											
	Summer school (1917)				14	6			79	185											
	Short winter course				5	2			30	73											
Tiffin	Heidelberg University	Coed	Ref.	1850			24	7			174	211			19	17					
	Preparatory				1	2			12	4											
	Arts and sciences				18	1			132	83			19	17							
	Fine arts				0	2			0	24											
	Music				5	2			30	100											
	Summer school (1917)				6	4			34	128											
Toledo	St. John's University	Men	R. C.				40	0			359	2			22	1					
	Preparatory				9	0			270	0											
	Arts and sciences				9	0			40	0			11	0							
	Law				22	0			40	2			11	1							
Do.	Toledo University	Coed	City	1872			38	1			281	348			6	8			2	0	1
	Arts and sciences				14	1			34	107			3	7							
	Graduate								6	23							2	0			
	Special								142	162											
	Engineering				2	1			24	4											
	Commerce				7	1			31	7											
	Education				3	0			1	43			0	1							
	Law				7	0			34	0			3	0							
	Pharmacy				5	0			9	2											
	Summer school (1917)				11	0			37	110											
	Extension courses				3	0			477	315											
Westerville	Otterbein College	Coed	U. B.	1847			19	7			153	258			15	20					3
	Preparatory				1	0			19	13											
	Arts and sciences				15	3			109	86			15	17							
	Home economics				0	1			0	25											
	Fine arts				0	1			0	20			0	1							
	Music				3	2			25	114			0	2							
	Summer school (1917)				6	6			12	121											
Wilmington	Wilmington College	Coed	Friends	1870			7	7	55		55	65			7	7					
	Arts and sciences				7	7				65			7	7							
	Summer shool (1917)				6	7			42	80											
Wooster	College of Wooster	Coed	Presb.	1868			37	4			218	289			25	41			2	1	4
	Preparatory				9	4			47	62											
	Arts and sciences				37	4			171	227			25	41			2	1			
	Summer school (1917)								(669)												
	Military drill								51	0											
Yellow Springs	Antioch College	Coed	Nonsect.	1853			7	7			34	62			8	3					
	Preparatory				2	4			8	13											
	Arts and sciences				5	3			23	13			8	3							
	Special								3	36											
Xenia	United Presbyterian Theological Seminary	Coed	Presb.	1794			5	0			23	2									
	Theology				5	0			23	2											
	Correspondence courses								7	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OKLAHOMA.																					
Chickasha	Oklahoma College for Women	Women	State				4	23			0	121			0	11					
	Arts and sciences				3	14			0	102			0	5							
	Home economics				0	3			0	11			0	3							
	Music				1	7			0	8			0	3							
East Enid	Phillips University	Coed	Disc				26	10			415	392			49	13			3	1	
	Preparatory				6	4			132	119											
	Arts and sciences				16	3			111	173			35	8							
	Graduate				6	1			7	5							3	1			
	Special								20	30											
	Fine arts				5	7			9	55											
	Music				4	3			50	220			0	5							
	Theology				6	1			86	26			14	0							
	Summer school (1917)								77	155											
	Extension courses				4	1			20	17											
Guthrie	Methodist University of Oklahoma	Coed	M. E	1911			8	7			89	126									
	Preparatory				0	1			25	20											
	Arts and sciences				7	3			15	41											
	Special								49	104											
	Music				1	3			0	5											
Kingfisher	Kingfisher College	Coed	Cong	1896			6	7			26	108			0	5					
	Preparatory				0	1			7	10											
	Arts and sciences				5	4			17	17			0	5							
	Special				1	2			2	81											
Norman	University of Oklahoma	Coed	State	1892			168	22			945	638			88	73			6	6	
	Arts and sciences				71	14			671	605			28	63							
	Graduate				39	1			24	19							6	6			
	General engineering				34	2			102	1											
	Chemical engineering								6	0											
	Civil engineering								5	0			0	0							

	Electrical engineering								18	0			5	0							
	Mechanical engineering								9	0			3	0							
	Commerce				0	2			39	3											
	Journalism				0	2			4	3											
	Education				0	4			12	113											
	Fine arts				29	12			32	210			0	6							
	Law				7	0			79	2			18	1							
	Medicine				66	1			71	4			20	0							
	Pharmacy				15	3			50	6			12	3							
	Summer school (1917)				56	13			370	677											
	Correspondence courses								156	114											
	Military drill								480	0											
Stillwater	Oklahoma Agricultural and Mechanical College.	Coed	State	1891			61	28			742	520			34	36			2	0	
	Preparatory				6	3			283	302											
	Arts and sciences				55	25			309	189			6	36							
	Graduate				5	1			5	2							2	0			
	Special								21	26											
	General engineering				8	0			78	0											
	Civil engineering				2	0			9	0			2	0							
	Electrical engineering				2	0			18	0			6	0							
	Mechanical engineering				4	0			7	0			4	0							
	Agriculture				14	1			110	0			14	0							
	Commerce				5	1			51	3			2	0							
	Education				1	0			21	62											
	Home economics				0	7			0	115											
	Summer school (1917)				64	11			90	305											
	Short winter course				24	6			117	3											
	Military drill								714	0											
OREGON.																					
Albany	Albany College	Coed	Presb	1867			6	6			7	68			2	1					
	Arts and sciences				6	3			7	26			2	1							
	Music				0	3			7	48											
Corvallis	Oregon Agricultural College	Coed	State	1870			60	18			971	697			118	67			3	2	
	Vocational				4	3			44	27											
	Graduate								17	3											
	Special								80	83											
	Chemical engineering				1	0			27	0			1	0							
	Civil engineering				3	0			22	1			2	0							
	Electrical engineering				2	0			83	0			8	0							
	Mechanical engineering				4	0			95	0			12	0							
	Mining engineering				3	0			41	0			3	0							
	Highway engineering				1	0			15	0											
	Irrigation engineering				1	0			2	0											
	Industrial arts				7	0			16	0			7	0							
	Agriculture				42	1			347	7			54	0			3	0			
	Forestry and logging				3	0			53	1			5	0							
	Commerce				3	1			78	160			10	2							
	Home economics				0	17			0	364			0	63			0	2			
	Music				3	2			16	42			0	1							
	Pharmacy				2	0			35	19			16	1							

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OREGON—contd.																					
Corvallis	Oregon Agricultural College—Continued.																				
	Summer school (1917)				46	28			96	268											
	Short winter course				27	13			969	452											
	Military drill								981	0											
Eugene	Eugene Bible University	Coed	Disc	1895			6	11			63	90			5	3					1
	Preparatory				1	3			20	16											
	Special								3	5											
	Music				0	3			11	41											
	Theology				6	5			62	69			5	3							
Do	University of Oregon	Coed	State	1876			120	22			820	696			36	90			2	1	
	Arts and sciences				80	13			408	541			35	87							
	Graduate								5	7							2	1			
	Special								259	76											
	Architecture				7	2			59	37											
	Commerce				5	0			1	19			1	0							
	Journalism				6	1			18	3											
	Education				6	2			23	3											
	Music				6	4			8	1			0	3							
	Law				5	0			1	3											
	Medicine				34	0			72	6											
	Summer school (1917)				31	5			148	354											
	Military drill								475	0											
Forest Grove	Pacific University	Coed	Cong	1854			5	7			29	75			1	5					1
	Arts and sciences				4	4			14	42			1	5							
	Music				1	3			18	56											
McMinnville	McMinnville College	Coed	Bapt	1857			14	7			93	121			6	7					
	Preparatory				12	2			35	31											
	Arts and sciences				10	3			54	55			6	6							
	Special				0	4			22	59											

	Music								0	4			0	1							
Milton	Columbia Junior College	Coed	M. E. So.				2	5			24	76									
	Preparatory				1	3			5	23											
	Arts and sciences				1	2			3	3											
	Music				0	4			16	50											
Newberg	Pacific College	Coed	Friends	1885			6	6			48	84			1	2					
	Preparatory				5	4			22	19											
	Arts and sciences				5	4			22	22			1	2							
	Special				1	2			5	45											
Portland	North Pacific College	Coed	Nonsect.	1893			35	0			322	9			114	0					
	Denistry				33	0			301	7			106	0							
	Pharmacy				10	0			18	2			8	0							
Do.	Reed College	Coed	Nonsect.	1911			17	3			100	110			10	26					
	Arts and sciences				17	3			100	110			10	26							
Salem	Kimball School of Theology	Coed	M. E.	1908			3	0			27	9									
	Theology				3	0			27	9											
Do.	Willamette University	Coed	M. E.	1844			22	6			123	173			10	23					
	Arts and sciences				15	6			72	115			10	23							
	Graduate								4	4											
	Special								21	2											
	Music				2	2			10	74											
	Law				9	0			23	5			9	0							
PENNSYLVANIA.																					
Allentown	Allentown College for Women	Women	Ref.	1866			0	15			0	102			0	6					
	Preparatory				0	4			0	42											
	Arts and sciences				0	10			0	50			0	6							
	Special				0	4			0	10											
Annville	Lebanon Valley College	Coed	U. B.	1866			11	10			200	152			27	16					
	Preparatory				1	1			30	1											
	Arts and sciences				8	5			132	76			27	16							
	Special				2	4			38	75											
Beatty	St. Vincent College	Men	R. C.	1846			32	0			470	0			7	0			3	0	
	Preparatory				20	0			273	0											
	Arts and sciences				6	0			106	0			3	0			3	0			
	Music				5	0			35	0			1	0							
	Theology				6	0			91	0			3	0							
	Military drill								90	0											
Beaver	Beaver College	Women	M. E.				9	22			0	166			0	4					
	Preparatory				1	6			0	13											
	Arts and sciences				5	10			0	38			0	4							
	Home economics				0	1			0	9											
	Fine arts				0	1			0	16											
	Music				3	3			0	61											
	Expression				0	1			0	29											
Bethlehem	Moravian College	Men	Morav.	1807			7	0			54	0			13	0			2	0	
	Arts and sciences				7	0			32	0			9	0							
	Graduate								8	0							2	0			
	Theology				5	0			14	0			4	0							

TABLE 27. *-Universities, colleges, and professional schools—Instructors, students, and graduates in 1917-18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PENNSYLVANIA—continued.																					
Bethlehem	Moravian Seminary and College for Women	Women	Morav	1742			9	15			29	201			0	6					
	Preparatory				0	7			0	79											
	Arts and sciences				9	8			0	63			0	6							
	Expression				0	1			0	25											
	Education				3	1			0	26											
	Home economics				0	2			0	32											
	Fine arts				1	0			0	9											
	Music				2	2			29	90											
Bryn Mawr	Bryn Mawr College	Women	Nonsect	1885			26	43			0	489			0	62			0	17	
	Arts and sciences				26	43			0	404			0	62							
	Graduate				26	28			0	82							0	17			
	Education				0	2			0	19											
Carlisle	Dickinson College	Coed	Nonsect	1783			14	0			212	95			24	14			11	1	10
	Arts and sciences				14	0			212	95			24	14			11	1			
Chambersburg	Wilson College	Women	Presb	1870			2	22			0	232			0	35					
	Arts and sciences				1	18			0	210			0	35							
	Music				1	4			0	50											
Chester	Crozier Theological Seminary	Men	Bapt	1868			13	0			71	0			16	0					
	Theology				13	0			71	0			16	0							
	Extension courses				7	0			700	0											
Collegeville	Ursinus College	Coed	Nonsect	1870			15	2			100	97			31	12					8
	Arts and sciences				15	2			92	71			31	12							
	Music				1	1			18	39											
	Summer school (1917)				9	0			10	11											
Easton	Lafayette College	Men	Presb	1832			47	0			448	0			72	0			2	0	9
	Arts and sciences				35	0			263	0			48	0							
	Graduate								2	0							2	0			
	Special								3	0											

	Engineering				20	0			6	0											
	Chemical engineering								25	0											
	Civil engineering								62	0			12	0							
	Electrical engineering								34	0			6	0							
	Mechanical engineering								41	0			6	0							
	Mining engineering								2	0											
	Military drill								350	0											
Gettysburg	Pennsylvania College	Coed	Luth.	1827			29	0			354	39			39	5					6
	Preparatory				5	0			56	5											
	Arts and sciences				24	0			245	23			39	5							
	Graduate								9	2											
	Special								44	9											
	Chemical engineering				3	0			20	0											
	Civil engineering				1	0			14	0											
	Electrical engineering				1	0			12	0											
	Mechanical engineering				1	0			13	0											
	Sanitary engineering				1	0			5	0											
	Commerce				1	0			20	0											
	Education				1	0			45	0											
	Military drill								217	0											
Do.	Theological Seminary of the General Synod of the Evangelical Lutheran Church.	Men	Luth.	1826			5	0			43	0									
	Theology				5	0			43	0											
Greenville	Thiel College	Coed	Luth.	1870			10	6			80	85			15	10			3	2	2
	Arts and sciences				10	6			80	85			15	10			3	2			
Grove City	Grove City College	Coed	Nonsect.	1876			15	4			126	207			9	28			1	0	3
	Arts and sciences				15	4			115	149			9	28			1	0			
	Special								11	58											
	Summer school (1917)				27	7			29	357											
	Military drill								110	0											
Haverford	Haverford College	Men	Friends	1833			28	0			169	2			23	0			2	1	
	Arts and sciences				28	0			156	0			23	0							
	Graduate				6	0			5	2							2	1			
	Special								8	0											
Lancaster	Franklin and Marshall College	Men	Ref.	1836			29	0			394	0			34	0			1	0	6
	Preparatory				13	0			150	0											
	Arts and sciences				16	0			244	0			34	0			1	0			
	Military drill								244	0											
Do.	Theological Seminary of the Reformed Church.	Men	Ref.	1825			6	0			40	0			5	0					
	Theology				6	0			40	0			5	0							
Lewisburg	Bucknell University	Coed	Bapt.	1846			32	11			340	319			31	37			9	0	2
	Arts and sciences				31	4			274	190			31	37							
	Graduate								37	5							9	0			
	Special				1	7			29	124											
Lincoln University	Lincoln University (colored)	Men	Nonsect.	1857			17	0			184	0			30	0			5	0	2
	Arts and sciences				15	0			148	0			26	0			5	0			
	Theology (Presbyterian)				11	0			36	0			4	0							
Meadville	Allegheny College	Coed	Nonsect.	1815			20	4			191	165			19	31			2	1	1
	Arts and sciences				20	4			189	163			19	31							
	Graduate								2	2							2	1			
	Summer school (1917)				6	1			9	19											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PENNSYLVANIA—continued.																					
Meadville	Meadville Theological School	Coed	Nonsect.	1844			7	1			25	3			1	0					
	Theology				7	1			25	3			1	0							
Mechanicsburg	Irving Female College	Women	Nonsect.	1856			5	10			0	90			0	20					
	Preparatory				1	6			0	15											
	Arts and sciences				3	4			0	34			0	13							
	Commerce				0	1			0	13											
	Education				1	1			0	25											
	Home economics				1	1			0	15											
	Music				1	2			0	55			0	7							
Myerstown	Albright College	Coed	U. Evang.	1894			13	9			111	69			15	10			1	0	
	Preparatory				2	3			17	10											
	Arts and sciences				11	0			72	31			15	10							
	Graduate								12	2							1	0			
	Special				0	6			10	26											
	Fine arts				0	1			0	7											
	Music				0	4			14	40											
New Wilmington	Westminster College	Coed	U. Presb.	1852			14	5			68	106			16	19					4
	Preparatory								4	2											
	Arts and sciences				13	2			59	87			16	19							
	Special				1	3			5	17											
Philadelphia	Drexel Institute	Coed	Nonsect.				19	29			126	278			20	6					
	Secretarial courses				2	5			3	62			0	2							
	Engineering				17	1			123	0			20	0							
	Home economics				0	23			0	236			0	4							
	Extension courses								2	87											
Do	Dropsie College	Coed	Jewish	1909			8	0			35	15							2	0	
	Graduate				8	0			35	15							2	0			

Do	Jefferson Medical College	Men	Nonsect.	1825			169	0			466	0			102	0			8	0	
	Medicine				169	0			466	0			102	0			3	0			
Do	La Salle College	Men	R. C.	1867			20	0			228	0			4	0					
	Preparatory				12	0			200	0											
	Civil engineering				8	0			20	0			4	0							
	Premedical				4	0			8	0											
	Military drill								192	0											
Do	Lutheran Theological Seminary	Men	Luth.	1864			9	0			65	0			8	0			2	0	
	Graduate								14	0							2	0			
	Special								5	0											
	Theology				9	0			65	0			8	0							
	Summer school (1917)								70	0											
Do	Philadelphia College of Pharmacy	Coed	Nonsect.	1821			16	0			392	28			112	1			23	2	2
	Pharmacy				16	0			392	28			112	1			23	2			
Do	St. Joseph's College	Men	R. C.				44	0			512	0			9	0					3
	Preparatory				35	0			437	0											
	Arts and sciences				10	0			75	0			9	0							
Do	Temple University	Coed	Nonsect.	1884			222	99			2,438	2,137			189	33			2	2	3
	Preparatory				14	9			384	170											
	Arts and sciences				24	5			292	278			16	17							
	Special				103	63			955	1,283											
	Civil engineering				3	0			33	0			1	0							
	Education				26	29			56	342											
	Theology				16	0			115	7			4	0			1	0			
	Law				10	0			160	7			29	2							
	Medicine				102	0			123	20			19	3							
	Dentistry				28	0			185	7			85	1							
	Pharmacy				21	0			135	23			35	10			1	2			
	Summer School (1917)				11	4			65	121											
	Military drill								450	0											
Do	University of Pennsylvania	Coed	Nonsect.	1740			666	1			5,303	1,887			601	73			71	26	4
	Arts and sciences				187	0			900	1,313			65	22							
	Graduate				137	0			408	180							66	26			
	Chemical engineering				[1] 165	0			163	0			9	0			1	0			
	Civil engineering								122	0			19	0							
	Electrical engineering								79	0			10	0							
	Mechanical engineering								94	0			13	0			1	0			
	Architecture								106	0			21	0			2	0			
	Commerce				78	0			2,061	29			69	0							
	Education				102	0			72	333			4	44							
	Law				27	0			62	2			22	0			1	0			
	Medicine				202	0			482	18			114	2							
	Veterinary medicine				22	0			68	0			37	0							
	Dentistry				89	1			686	12			218	5							
	Military drill								700	0											
Do	Woman's Medical College of Pennsylvania	Women	Nonsect.	1850			16	43			0	47			0	8					
	Medicine				16	43			0	47			0	8							

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[1] Towne Scientific School.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PENNSYLVANIA—continued.																					
Pittsburgh	Carnegie Institute of Technology	Coed	Nonsect.	1905			184	34			3,394	974			52	45			4	0	
	Noncollegiate								2,388	548											
	Arts and sciences				184	34			475	353			8	45							
	Graduate								29	23											
	General engineering								8	0											
	Chemical engineering								72	0			8	0			2	0			
	Civil engineering								46	0			10	0							
	Electrical engineering								75	0			11	0			1	0			
	Mechanical engineering								91	0			9	0			1	0			
	Mining engineering								8	0											
	Metallurgical engineering								28	0			4	0							
	Commercial engineering								29	0			4	0							
	Sanitary engineering								5	0			1	0							
	Architecture								86	0			2	0							
	Education								54	50			5	0							
	Military drill								1,000	0											
Do	Pennsylvania College for Women	Women	Nonsect.	1870			5	16			0	185			0	24					
	Arts and sciences				5	16			0	160			0	24							
	Graduate								0	2											
	Special				2	2			0	23											
Do	Pittsburgh Theological Seminary	Men	U. P.	1825			7	0			61	0			25	0					
	Theology				7	0			61	0			25	0							
Do	Reformed Presbyterian Theological Seminary.	Men	Presb.	1850			3	0			8	0									
	Theology				3	0			8	0											
Do	University of Pittsburgh	Coed	Nonsect.	1786			266	34			2,338	1,204			277	88			6	2	15
	Arts and sciences				136	34			483	338			47	81							
	Graduate								89	55							6	2			

	Engineering								171	1			28	0							
	Mining engineering								59	0			3	0							
	Commerce								860	103			20	0							
	Education								96	706											
	Law				12	0			62	3			11	3							
	Medicine				130	2			145	18			24	3							
	Dentistry				29	0			331	5			84	0							
	Pharmacy				10	0			157	16			60	1							
	Extension courses								(2,077)												
Do.	Western Theological Seminary	Men	Presb.	1827			11	0			61	0			17	0					
	Theology				11	0			61	0			17	0							
Selinsgrove	Susquehanna University	Coed	Luth.	1858			19	2			256	143			32	18			3	1	11
	Preparatory				3	0			21	14											
	Arts and sciences				19	2			184	96			23	12							
	Graduate								31	4							8	1			
	Special								18	74											
	Music				1	3			12	78			0	6							
	Theology				4	0			14	0			9	0							
	Summer school (1917)				10	2			43	36											
	Military drill								146	0											
South Bethlehem	Lehigh University	Men	Nonsect.	1866			77	0			677	0			74	0			2	0	
	Arts and sciences				40	0			142	0			13	0							
	Graduate								13	0							2	0			
	Special								9	0											
	Chemical engineering				10	0			121	0			8	0							
	Civil engineering				8	0			97	0			19	0							
	Electrical engineering				5	0			72	0			6	0							
	Mechanical engineering				7	0			121	0			14	0							
	Mining engineering				2	0			51	0			7	0							
	Metallurgical engineering				2	0			25	0											
	Electrometallurgy				2	0			35	0			5	0							
	Commerce				3	0			54	0											
	Education				2	0			20	0											
	Extension courses				9	0			32	126											
State College	Pennsylvania State College	Coed	State	1855			235	15			1,960	232			188	83			17	2	7
	Arts and sciences				52	6			138	47			15	6							
	Graduate								40	3							12	2			
	Special								137	12											
	General engineering				25	0			367	1											
	Chemical engineering				28	0			265	7			3	0							
	Civil engineering				16	0			60	0			20	0			2	0			
	Electrical engineering				8	0			132	0			31	0			2	0			
	Mechanical engineering				10	0			81	0			19	0			1	0			
	Mining engineering				12	0			98	0			8	0							
	Agriculture				75	4			526	8			80	1							
	Architecture				5	0			17	0											
	Forestry				4	0			25	0			3	0							
	Commerce								56	0			4	0							
	Education								18	12											
	Home economics				0	9			0	142			0	26							
	Summer school (1917)				55	21			132	683											
	Short winter courses								76	16											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PENNSYLVANIA—continued.																					
State College	Pennsylvania State College—Continued.																				
	Extension courses				71	0			(4,600)												
	Correspondence courses								(5,500)												
	Military drill								1,214	0											
Swarthmore	Swarthmore College	Coed	Nonsect.	1869			14	30			204	282			36	59					4
	Arts and sciences				14	30			204	282			25	59							
	Graduate								0	3							0	3			
	General engineering								25	0											
	Chemical engineering				3	0			22	0			5	0							
	Civil engineering				1	0			12	1			1	0							
	Electrical engineering				1	0			12	1			3	0							
	Mechanical engineering				2	0			28	0			2	0							
	Education				1	0			0	4											
	Home economics				0	1			0	10											
Villanova	Villanova College	Men	R. C.				43	0			308	0			22	0			16	0	3
	Preparatory				23	0			120	0											
	Arts and sciences				26	0			138	0			12	0			16	0			
	Civil engineering				2	0			34	0			5	0							
	Electrical engineering				3	0			36	0			5	0							
	Mechanical engineering				2	0			12	0											
	Theology				7	0			50	0											
	Extension courses				5	0			0	23											
	Military drill								125	0											
Washington	Washington and Jefferson College	Men	Nonsect.				17	0			254	0			43	0			2	0	
	Arts and sciences				17	0			254	0			43	0			2	0			
Waynesburg	Waynesburg College	Coed					8	6			58	143			8	13			1	3	5
	Arts and sciences				8	2			44	62			8	13			1	3			
	Music				0	4			14	81											

PORTO RICO.																					
San Juan	University of Porto Rico	Coed					28	8			206	257			9	0					
	Preparatory				25	8			114	3											
	Special								68	224											
	General engineering				9	1			34	0											
	Civil engineering								6	1			3	0							
	Electrical engineering								1	0											
	Mechanical engineering								8	0			1	0							
	Sugar engineering								13	0			3	0							
	Agriculture				7	1			20	0			2	0							
	Home economics				0	3			0	30											
	Summer school (1917)				5	3			27	106											
	Extension courses								62	47											
	Military drill								175	0											
RHODE ISLAND.																					
Kingston	Rhode Island State College	Coed	State				21	7			194	49			14	6					
	Arts and sciences				21	7			194	47			2	0							
	Graduate								0	2											
	General engineering								48	0											
	Chemical engineering								18	0			3	0							
	Civil engineering								9	0			1	0							
	Electrical engineering								13	0			1	0							
	Mechanical engineering								23	0			3	0							
	Agriculture								46	0			4	0							
	Home economics								0	42			0	6							
	Military drill								190	0											
Providence	Brown University	Coed	Bapt.				63	3			688	249			79	51			28	12	9
	Arts and sciences				55	3			578	225			66	51							
	Graduate								34	22							28	12			
	Special								60	15											
	Engineering				8	0			105	0			13	0							
	Extension courses								(354)												
SOUTH CAROLINA.																					
Anderson	Anderson College	Women	Bapt.				6	15			0	221			0	16					
	Preparatory								0	12											
	Arts and sciences				5	5			0	138			0	16							
	Special				1	10			0	71											
	Summer school (1917)				10	12			0	117											
Charleston	College of Charleston	Men	City	1790			10	0			61	0			8	0					
	Arts and sciences				10	0			61	0			8	0							
	Military drill								44	0											
Do	The Citadel, the Military College of South Carolina.	Men	State	1842			14	0			330	0			28	0					
	Arts and sciences				14	0			330	0			28	0							
	Military drill								330	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
SOUTH CAROLINA—continued.																					
Clemson College	Clemson Agricultural College	Men	State	1893			68	0			804	0			110	0					
	Arts and sciences				68	0			756	0			1	0							
	Graduate								8	0											
	Special								40	0											
	General engineering				7	0			218	0											
	Civil engineering				2	0			18	0			11	0							
	Mechanical engineering				4	0			62	0			34	0							
	Textile engineering				3	0			13	0			4	0							
	Agriculture				25	0			466	0			58	0							
	Architecture				2	0			9	0			2	0							
	Military drill								804	0											
Clinton	Presbyterian College of South Carolina	Coed	Presb	1880			10	0			107	20			14	3					2
	Arts and sciences				10	0			107	20			14	3							
College Place	Columbia College	Women	Meth				5	14			0	240			0	40					
	Preparatory				0	2			0	4											
	Arts and sciences				5	12			0	143			0	32							
	Special								0	102											
	Commerce								0	8											
	Home economics								0	9											
	Music								0	18			0	8							
Columbia	Benedict College (colored)	Coed	Bapt	1871			6	5			106	141			11	2					3
	Preparatory				6	5			70	122											
	Arts and sciences				6	5			36	19			11	2							
Do	Southern Lutheran Theological Seminary	Men	Luth	1828			3	0			20	0									
	Theology				3	0			20	0											
Do	University of South Carolina	Coed	State	1805			32	0			843	64			47	4			8	3	7
	Arts and sciences				28	0			171	18			30	2							
	Graduate				5	0			20	11							8	3			
	Special								26	23											
	Civil engineering				2	0			14	0			4	0							

	Education				4	0			80	9											
	Law				3	0			40	3			13	2							
	Summer school (1917)				13	1			21	30											
	Military drill								200	0											
Due West	Erskine College	Coed	A. R. P.	1837			8	0			99	28			9	4			1	0	3
	Arts and sciences				8	0			99	28			9	4			1	0			
Greenville	Furman University	Men	Bapt.	1852			12	0			213	0			26	0					
	Arts and sciences				12	0			213	0			26	0							
Greenwood	Lander College	Women	M. E. So	1873			3	20			0	295			0	22					
	Preparatory				0	2			0	44											
	Arts and sciences				2	7			0	194			0	20							
	Special								0	57											
	Education				0	1			0	20											
	Home economics				0	4			0	41											
	Fine Arts				0	2			0	33											
	Music				1	6			0	101			0	2							
Hartsville	Coker College	Women	Bapt.				6	14			0	359			0	30					
	Arts and sciences				6	14			0	359			0	30							
Newberry	Newberry College	Coed	Luth.	1856			15	0			122	37			23	2					
	Preparatory				1	0			16	2											
	Arts and sciences				14	0			104	35			23	2							
	Graduate								2	0											
	Military drill								100	0											
Spartanburg	Converse College	Women	Nonsect.	1890			11	14			0	339			0	38			0	4	
	Arts and sciences				11	14			0	259			0	38							
	Graduate								0	6							0	4			
	Special								0	74											
Do	Wofford College	Men	M. E. So.	1854			17	0			375	0			54	0			10	0	
	Preparatory				6	0			101	0											
	Arts and sciences				11	0			274	0			54	0			10	0			
	Military drill								274	0											
SOUTH DAKOTA.																					
Brookings	South Dakota State College of Agriculture and Mechanic Arts.	Coed	State	1884			43	18			534	378			20	23			5	0	
	Preparatory				8	5			40	29											
	Secondary school of agriculture				30	10			184	56											
	Arts and sciences				25	6			174	137			3	4							
	Graduate								5	0							5	0			
	Special				3	3			14	43											
	Civil engineering				1	0			12	0			1	0							
	Electrical engineering				1	0			23	0			2	0							
	Mechanical engineering				4	0			4	1											
	Agriculture				15	0			85	0			14	0							
	Commerce				1	1			3	5											
	Home economics				0	5			0	101			0	19							
	Fine arts				0	2			0	2											
	Music				3	2			56	87											
	Pharmacy				2	0			15	4											
	Summer school (1917)				22	9			69	136											
	Short winter course				6	0			66	7											
	Military drill								306	0											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
NORTH DAKOTA—continued.																					
Huron	Huron College	Coed	Presb.	1883			13	7			96	257			4	10					1
	Preparatory				3	3			19	25											
	Arts and sciences				10	4			50	62			4	10							
	Special								19	101											
	Music								13	69											
	Summer school (1917)								19	132											
Mitchell	Dakota Wesleyan University	Coed	M. E.	1885			13	11			90	200			7	13					
	Preparatory				2	4			33	61											
	Arts and sciences				10	4			59	120			7	13							
	Music				1	3			90	200											
	Summer school (1917)				4	4			11	87											
	Extension courses				3	1			16	50											
	Military drill								90	0											
Rapid City	South Dakota State School of Mines	Coed	State	1885			11	1			89	16			5	0					1
	Preparatory				2	1			30	1											
	Special								16	12											
	Mining engineering				9	0			43	3			5	0							
Sioux Falls	Sioux Falls College	Coed	Bapt.	1883			10	6			75	120			4	4					2
	Preparatory				1	5			27	28											
	Arts and sciences				6	1			27	22			4	4							
	Music				3	0			30	75											
Vermillion	University of South Dakota	Coed	State	1882			37	14			228	276			23	22			4	2	1
	Arts and sciences				30	11			67	183			4	22							
	Graduate				5	0			2	4							4	2			
	Special								16	22											
	General engineering				3	0			39	0											
	Telegraphy				1	0			11	0											
	Music				3	4			5	63											

	Law				4	0			37	2			12	0							
	Medicine				3	0			61	2			7	0							
	Summer school (1917)				11	8			34	88											
	Extension courses				5	4			58	150											
	Correspondence courses				7	3			24	29											
Yankton	Yankton College	Coed	Nonsect.	1881			9	19			90	286			3	4					
	Preparatory				4	18			19	51											
	Arts and sciences				9	12			45	95			8	4							
	Graduate								1	0											
	Commerce				0	2			8	40											
	Music				1	4			18	100											
	Summer school (1917)				5	10			30	118											
TENNESSEE.																					
Bristol	King College	Men	Presb.	1869			7	0			70	0			7	0					3
	Preparatory				1	0			10	0											
	Arts and sciences				6	0			60	0			7	0							
	Military drill								66	0											
Clarksville	Southwestern Presbyterian University	Coed	Presb.	1875			9	1			156	16			6	0			1	0	2
	Arts and sciences				9	1			156	16			6	0			1	0			
	Military drill								125	0											
Greeneville	Tusculum College	Coed	Nonsect.	1794			9	9			85	78			4	4					2
	Preparatory				3	3			53	42											
	Arts and sciences				5	2			32	22			4	4							
	Home economics				0	2			0	43											
	Music				1	2			6	40											
	Military drill								70	0											
Harrogate	Lincoln Memorial University	Coed	Nonsect.	1897			14	11			202	174			5	4					2
	Preparatory				5	3			100	76											
	Arts and sciences				5	4			11	20			5	4							
	Special				2	2			70	38											
	Agriculture				1	0			7	0											
	Music				1	2			14	40											
	Summer school (1917)				6	2			60	40											
Jackson	Memphis Conference Female Institute[1]	Women	M. E. So.	1840			3	16			0	129									
	Preparatory				1	5			0	60											
	Arts and sciences				2	3			0	24											
	Special				0	8			0	48											
	Commerce				0	1			0	20											
	Home economics				0	1			0	12											
	Music				0	5			0	48											
Jefferson City	Carson and Newman College	Coed	Bapt.	1851			7	6			84	92			6	6					
	Preparatory				7	6			46	31											
	Arts and sciences				7	6			35	24			6	6							
	Education								12	20											
	Home economics								0	27											
	Fine arts								0	25											
	Music								0	35											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
TENNESSEE—contd.																					
Knoxville	University of Tennessee	Coed	State	1794			200	16			579	254			64	28			0	1	1
	Arts and sciences				31	8			111	239			11	27							
	Graduate								7	3							0	1			
	General engineering				23	2			87	0			3	0							
	Chemical engineering								6	0			3	0							
	Civil engineering								10	0			5	0							
	Electrical engineering								13	0			4	0							
	Mechanical engineering								6	0											
	Agriculture				27	5			150	1											
	Commerce								14	0											
	Education								0	2											
	Home economics								0	5											
	Law				9	0			39	0			6	0							
	Medicine				113	0			87	3			17	1							
	Dentistry				29	0			44	1			15	0							
	Pharmacy				13	1			5	0											
	Summer school (1917)				34	27			324	966											
	Short winter course								91	0											
	Correspondence courses								28	0											
	Military drill								357	0											
Lebanon	Cumberland University	Coed	Presb	1842			17	8			123	77			61	8					
	Preparatory				3	3			14	22											
	Arts and sciences				9	4			35	22			11	4							
	Graduate								2	0											
	Special								16	32											
	Home economics				0	1			0	10											
	Music				1	2			10	32											
	Law				4	0			72	4			50	4							
	Military drill								90	0											

Milligan	Milligan College	Coed	Chris.	1882			7	5			72	61			1	7					
	Preparatory				5	5			60	40											
	Arts and sciences				4	0			25	10			1	3							
	Education								5	8											
	Music								3	29			0	4							
	Theology				2	0			3	2											
Murfreesboro	Tennessee College	Women	Bapt.	1907			8	19			0	263			0	15					
	Preparatory				3	7			0	159											
	Arts and sciences				7	6			0	98			0	15							
	Special				2	6			0	6											
Nashville	Fisk University (colored)	Coed	Cong.	1866			16	17			173	232									1
	Preparatory				4	8			66	84											
	Arts and sciences				12	2			106	115											
	Graduate								1	0											
	Music				0	7			11	164											
Do.	George Peabody College for Teachers	Coed	Nonsect.				60	25			335	1,370			27	51			14	5	
	Arts and sciences				60	25			251	1,325											
	Graduate								84	45							14	5			
	Agriculture				3	0			128	126											
	Education				14	7			335	1,370			27	51							
	Home economics				0	10			0	713											
	Fine arts				5	2			47	506											
	Music				1	0			12	195											
	Summer school (1917)				60	25			294	1,110											
	Short winter course				13	9			3	43											
Do.	Meharry Medical College (colored)	Coed	Nonsect.	1876			37	1			393	5			115	1					
	Medicine				22	1			202	1			76	1							
	Dentistry				11	0			172	1			32	0							
	Pharmacy				4	0			19	3			7	0							
Do.	Vanderbilt University	Coed	Nonsect.	1875			170	0			619	92			106	25			11	1	
	Arts and sciences				34	0			242	79			22	22							
	Graduate				7	0			22	4							11	1			
	General engineering				8	0			48	0			4	0							
	Theology				12	0			30	3			5	0							
	Law				7	0			33	1			3	0							
	Medicine				77	0			119	0			23	0							
	Dentistry				16	0			107	1			43	1							
	Pharmacy				9	0			18	4			6	2							
	Military drill								140	0											
Pulaski	Martin College[1]	Women	M. E. So.				2	17			0	185									
	Preparatory				1	11			0	125											
	Arts and sciences								0	22											
	Special								0	38											
	Home economics				0	1			0	30											
	Fine arts				0	2			0	18											
	Music				1	3			0	106											
Ruskin	Ruskin-Cave College	Coed	Nonsect.				13	17			91	112			6	4					
	Preparatory				5	10			50	65											
	Arts and sciences				7	8			42	39			6	4							
	Special				1	8			40	123											
	Commerce				1	3			13	17											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
TENNESSEE—contd.																					
Ruskin	**Ruskin-Cave College—Continued.**																				
	Education				1	1			20	25											
	Home economics				0	1			0	11											
	Fine arts				0	1			3	18											
	Music				1	4			16	68											
	Oratory				0	2			16	18											
	Theology				3	1			21	18											
	Military drill								78	0											
Sewanee	University of the South	Men	P. E.	1868			27	0			160	0			9	0					6
	Arts and sciences				20	0			146	0			8	0							
	Graduate				8	0			15	0											
	Theology				8	0			15	0			1	0							
	Summer school (1917)				2	0			9	0											
Washington College.	Washington College	Coed	Nonsect	1794			7	6			87	104			3	5					
	Preparatory				3	2			40	42											
	Arts and sciences				3	1			7	14			3	1							
	Special				0	1			12	24											
	Agriculture				1	0			16	10											
	Music				0	2			12	14			0	4							
TEXAS.																					
Austin	Austin Presbyterian Theological Seminary.	Coed	Presb	1902			4	0			11	21			3	0					
	Theology				4	0			11	21			3	0							
Do	University of Texas	Coed	State	1883			152	27			1,293	974			171	127			11	10	
	Arts and sciences				83	21			675	871			70	115							
	Graduate								88	27							11	10			
	Chemical engineering				2	0			23	0											
	Civil engineering				4	0			42	0			5	0							
	Electrical engineering				3	0			75	0			6	0							

	Mechanical engineering				2	0			19	0											
	Architecture				3	0			21	11			4	1							
	Commerce				4	0			138	42											
	Journalism				2	0			13	23											
	Education				7	0			68	369											
	Home economics				0	6			0	167			0	5							
	Music				1	0			0	54											
	Law				8	0			140	12			26	3							
	Medicine				30	0			197	12			39	1							
	Pharmacy				2	0			41	9			21	2							
	Summer school (1917)				19	11			473	898											
Belton	Baylor Female College	Women	Bapt	1846			10	36			0	786			0	16					
	Preparatory				1	11			0	327											
	Arts and sciences				6	10			0	269			0	16							
	Special				3	15			0	190											
	Summer school (1917)				12	8			0	223											
	Correspondence courses				4	1			0	28											
Brownwood	Howard Payne College	Coed	Bapt	1889			13	8			141	208			3	8					
	Preparatory				3	3			61	80											
	Arts and sciences				7	2			55	95			3	8							
	Special				3	3			25	33											
	Summer school (1917)				3	2			44	127											
	Correspondence courses								2	11											
Clarendon	Clarendon College[1]	Coed	M. E. So				6	11			165	151									
	Preparatory				6	11			115	110											
	Arts and sciences				6	11			50	41											
	Education								0	40											
	Home economics								0	30											
	Music								10	115											
College Station	Agricultural and Mechanical College of Texas	Men	State	1876			107	0			1,152	0			47	0			3	0	
	General engineering								9	0			1	0							
	Chemical engineering								39	0			1	0							
	Civil engineering								129	0			5	0							
	Electrical engineering								152	0			7	0							
	Mechanical engineering								69	0			2	0							
	Textile engineering								16	0			1	0							
	Architectural engineering								7	0			1	0							
	Science								38	0											
	Agriculture								386	0			29	0			3	0			
	Architecture								15	0											
	Veterinary medicine								14	0											
	Two-year courses in agriculture								278	0											
	Summer school (1917)								926	206											
	Military drill								1,120	0											
Dallas	Southern Methodist University	Coed	M. E. So				27	6			339	368			29	35			4	1	
	Arts and sciences				20	6			240	362			27	35							
	Graduate								5	2							4	1			
	Theology				7	0			94	4			2	0							
	Military drill								200	0											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
TEXAS—contd.																					
Denton	College of Industrial Arts	Women	State				14	86			0	1,247			0	96					
	Preparatory				2	3			0	116											
	Arts and sciences				11	65			0	886			0	51							
	Special								0	245											
	Home economics				0	18			0	593			0	45							
	Fine arts				0	6			0	40											
	Music				1	8			0	30											
	Summer school (1917)				6	18			0	686											
Fort Worth	Southwestern Baptist Theological Seminary	Coed	Bapt.	1905			10	9			212	138			10	0			10	0	
	Theology				10	9			212	138			10	0			10	0			
	Summer school (1917)				5	0			69	40											
	Correspondence courses								105	30											
Do.	Texas Christian University	Coed					27	16			262	375			14	19			5	0	
	Preparatory				2	3			44	24											
	Arts and sciences				14	2			173	156			8	19			5	0			
	Home economics				0	2			0	28											
	Fine arts				0	5			8	102											
	Music				3	4			7	65											
	Theology				3	0			30	10			1	0							
	Law				5	0			17	0			5	0							
	Summer school (1917)				10	3			50	74											
Do.	Texas Woman's College	Women	M. E. So.	1891			6	12			0	383			0	17					
	Preparatory				0	4			0	133											
	Arts and sciences				6	8			0	250			0	17							
Georgetown	Southwestern University	Coed	M. E. So.	1873			42	7			315	199			14	14					
	Arts and sciences				13	3			137	165			14	14							
	Special				1	4			0	34											
	Theology				28	0			178	0											
	Summer school (1917)				9	7			75	74											
	Correspondence courses				11	1			44	54											

Houston	Rice Institute	Coed	Nonsect.	1912			54	0			436	215			20	13			3	0	
	Arts and sciences				54	0			369	207			15	13							
	Graduate								9	3							3	0			
	Special								5	2											
	Chemical engineering								15	0			1	0							
	Civil engineering								9	0			2	0							
	Electrical engineering								5	0			2	0							
	Mechanical engineering								10	0											
	Architecture								14	3											
Tehuacana	Westminister College [1]	Coed	M. Prot.	1896			8	5			50	81									
	Preparatory				2	3			15	14											
	Arts and sciences				3	2			12	11											
	Fine arts								5	6											
	Music				2	0			2	36											
	Theology				1	0			16	14											
	Summer school (1917)				3	3			65	15											
	Correspondence courses								13	0											
	Military drill								25	0											
Terrell	Texas Military College [1]	Men	Nonsect.				8	0			75	0									
	Preparatory				8	0			50	0											
	Arts and sciences				8	0			25	0											
	Military drill								75	0											
Thorp Springs	Thorp Springs Christian College [1]	Coed	Chris.				3	5			73	112									
	Preparatory								45	57											
	Arts and sciences				3	3			28	40											
	Special				0	2			21	34											
	Home economics								0	20											
	Fine arts								0	14											
	Music								0	21											
Waco	Baylor University	Coed	Bapt.	1845			24	8			672	459			42	25					
	Arts and sciences				18	4			279	335			18	25							
	Graduate								1	1											
	Special				6	4			36	85											
	Education				2	1			241	26											
	Medicine								67	8			13	0							
	Pharmacy								48	4			11	0							
	Summer school (1917)				21	3			296	410											
	Correspondence courses								2	31											
	Military drill								277	0											
UTAH.																					
Logan	Agricultural College of Utah	Coed	State	1890			36	8			536	300			30	18			1	0	
	General science				16	2			41	29			10	1							
	Special								229	110											
	Agricultural engineering				8	0			69	0			6	0							
	Agriculture				11	0			121	0			12	0			1	0			
	Commerce								70	21			2	0							
	Home economics				0	6			0	140			0	17							
	Veterinary science				1	0			52	0											
	Summer school (1917)								45	151											
	Extension courses								201	1,046											
	Military drill								293	0											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
UTAH—continued.																					
Salt Lake City	University of Utah	Coed	State	1850			97	27			607	546			51	60			5	2	
	Preparatory				13	5			33	32											
	Arts and sciences				68	11			137	162			13	17							
	Graduate								36	4							5	2			
	General engineering				12	0			147	0											
	Chemical engineering				3	0			2	0			1	0							
	Civil engineering				2	0			3	0			3	0							
	Electrical engineering				3	0			4	0			2	0							
	Mechanical engineering				4	0			2	0			1	0							
	Mining engineering				4	0			6	0			4	0							
	Commerce				15	1			68	24			1	0							
	Education				21	10			33	323			23	43							
	Law				11	0			49	0			3	0							
	Medicine				13	0			94	1											
	Summer school (1917)								81	427											
	Extension courses				34	4			534	1,016											
	Military drill								555	0											
VERMONT.																					
Burlington	University of Vermont and State Agricultural College.	Coed	State	1800			100	4			404	187			53	30			1	0	1
	Arts and sciences				33	1			171	134			13	25							
	Graduate								2	2							1	0			
	Special								2	6											
	Civil engineering				6	0			23	0			3	0							
	Electrical engineering				4	0			19	0			2	0							
	Mechanical engineering				8	0			22	0			2	0							
	Agriculture				13	0			60	0			11	0							
	Home economics				0	3			0	45			0	5							

	Medicine				41	0			106	0			22	0							
	Summer school (1917)				9	5			30	301											
	Short winter course								18	0											
	Military drill								220	0											
Middlebury	Middlebury College	Coed	Nonsect.	1800			27	3			135	152			15	37					4
	Arts and sciences				27	3			135	151			15	37							
	Graduate								0	1											
	Summer school (1917)				6	14			32	174											
	Military drill								100	0											
Northfield	Norwich University	Men	Nonsect.	1819			15	0			191	0			9	0			1	0	
	Arts and sciences				11	0			81	0			4	0			1	0			
	Civil engineering				8	0			69	0			5	0							
	Electrical engineering				1	0			41	0											
	Military drill								191	0											
Winooski	St. Michael's College	Men	R. C.				9	0			87	0									
	Preparatory				5	0			70	0											
	Arts and sciences				3	0			10	0											
	Special								2	0											
	Music				1	0			10	0											
	Theology				3	0			11	0											
VIRGINIA.																					
Ashland	Randolph-Macon College	Men	M. E. So.	1832			17	0			145	0			10	0			2	0	3
	Arts and sciences				17	0			145	0			10	0			2	0			
Blacksburg	Virginia Polytechnic Institute	Men	State	1872			55	0			527	0			35	0			3	0	
	Arts and sciences				35	0			38	0			12	0							
	Graduate								8	0											
	Special								84	0											
	Chemical engineering				33	0			34	0											
	Civil engineering				31	0			43	0			2	0							
	Electrical engineering				30	0			119	0			13	0							
	Mechanical engineering				82	0			75	0			3	0			2	0			
	Mining engineering				32	0			13	0											
	Agriculture				41	0			113	0			5	0			1	0			
	Summer school (1917)				30	0			35	22											
	Short winter course				14	0			52	1											
	Military drill								511	0											
Blackstone	Blackstone College for Girls[1]	Women	M. E. So.				0	20			0	389									
	Preparatory				0	14			0	366											
	Arts and sciences								0	60											
	Special				0	8			0	255											
	Music				0	7			0	240											
Bridgewater	Bridgewater College	Coed	Breth.	1880			13	5			100	122			11	1					
	Preparatory				2	2			14	27											
	Arts and sciences				8	0			52	32			11	1							
	Commerce				1	0			12	10											
	Fine arts				0	1			0	18											
	Music				2	2			22	35											

[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
VIRGINIA—contd.																					
Bristol	Sullins College[1]	Women	Bapt.				3	22			0	302									
	Preparatory				0	3			0	75											
	Arts and sciences				3	19			0	148											
	Special								0	92											
	Home economics								0	40											
	Fine arts								0	52											
	Music								0	98											
Do	Virginia Intermont College[1]	Women	Bapt.	1883			1	19			0	215									
	Preparatory				0	6			0	91											
	Arts and sciences				1	8			0	60											
	Special				0	10			0	64											
	Education								0	30											
	Home economics								0	31											
	Fine arts								0	23											
	Music								0	127											
Charlottesville	University of Virginia	Men	State	1825			98	0			780	0			93	0			5	0	
	Arts and sciences				42	0			462	0			49	0							
	Graduate				26	0			16	0							5	0			
	Chemical engineering				5	0			18	0											
	Civil engineering				4	0			33	0			4	0							
	Electrical engineering				2	0			34	0			1	0							
	Mechanical engineering				5	0			19	0			5	0							
	Law				6	0			100	0			12	0							
	Medicine				23	0			101	0			22	0							
	Military drill								450	0											
Daleville	Daleville College[1]	Coed	Breth.				10	2			63	39									
	Preparatory				6	2			42	25											
	Arts and sciences				3	1			15	10											
	Home economics				0	1			0	9											
	Music				1	1			10	17											
Danville	Averett College[1]	Women					2	17			0	127									

	Preparatory				0	5			0	40											
	Arts and sciences				1	5			0	20											
	Special				1	8			0	90											
Emory	Emory and Henry College	Coed	M. E. So	1838			13	0			174	10			12	0					
	Preparatory				4	0			29	5											
	Arts and sciences				9	0			145	5			12	0							
Hampton-Sidney	Hampton-Sidney College	Men	Presb	1776			8	0			89	0			17	0					4
	Arts and sciences				8	0			89	0			17	0							
	Military drill								87	0											
Hollins	Hollins Institute	Women	Nonsect	1842			10	17			0	270			0	11					
	Preparatory				0	5			0	59											
	Arts and sciences				7	6			0	122			0	11							
	Special				3	6			0	89											
Lexington	Virginia Military Institute	Men	State	1839			28	0			584	0			50	0			1	0	
	Arts and sciences				3	0			42	0			10	0							
	Special								5	0											
	General engineering				16	0			442	0											
	Civil engineering				3	0			41	0			20	0			1	0			
	Chemical engineering				4	0			27	0			10	0							
	Electrical engineering				2	0			27	0			10	0							
	Military drill								584	0											
Do	Washington and Lee University	Men	Nonsect	1749			30	0			390	0			55	0			2	0	6
	Arts and sciences				27	0			237	0			37	0			2	0			
	Commerce				4	0			81	0											
	Law				3	0			76	0			18	0							
	Military drill								151	0											
Lynchburg	Randolph-Macon Woman's College	Women	M. E. So	1893			16	22			0	618			0	115					
	Arts and sciences				16	22			0	603			0	115							
	Graduate								0	6											
	Special								0	9											
Do	Virginia Christian College	Coed	Disc				8	6			61	62			0	2					
	Preparatory				1	3			33	21											
	Arts and sciences				6	0			28	27			0	2							
	Special				0	2			7	20											
	Fine arts				0	1			1	3											
	Music				1	1			0	28											
Do	Virginia Theological Seminary and College (colored).	Coed	Bapt	1908			16	5			110	144			6	0					
	Preparatory				7	2			90	144											
	Arts and sciences				9	1			20	0			3	0							
	Home economics				0	2			0	60											
	Theology				4	0			65	0			3	0							
	Military drill								110	0											
Manassas	Eastern College	Coed	Nonsect	1900			10	11			91	112			9	12					
	Preparatory				3	3			35	38											
	Arts and sciences				4	4			46	39			9	8							
	Education				1	0			12	13											
	Home economics				0	2			0	12			0	4							
	Fine arts				0	1			0	10											
	Music				2	1			7	36											
	Military drill								62	0											

[1] Junior college.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
VIRGINIA—contd.																					
Marion	Marion College[1]	Women					0	15			0	155									
	Preparatory				0	6			0	75											
	Arts and sciences				0	6			0	25											
	Special				0	4			0	55											
	Home economics				0	1			0	12											
	Music				0	4			0	60											
Richmond	Medical College of Virginia	Men	State	1838			132	1			276	3			76	0					
	Medicine				108	1			139	0			43	0							
	Dentistry				25	0			95	0			21	0							
	Pharmacy				7	0			42	8			12	0							
Do	Richmond College	Coed	Bapt				24	8			255	66			36	0					2
	Arts and sciences				20	8			231	66			31	0							
	Law				4	0			24	0			5	0							
	Military drill								230	0											
Do	Union Theological Seminary	Men	Presb	1812			8	0			72	0			21	0					
	Theology				8	0			72	0			21	0							
	Correspondence courses								18	0											
Do	Virginia Union University (colored)	Men	Bapt	1865			10	3			315	0			10	0					2
	Preparatory				3	3			199	0											
	Arts and sciences				6	0			67	0			7	0							
	Graduate				1	0			2	0											
	Theology				4	0			47	0			3	0							
	Summer school (1917)								17	130											
Salem	Elizabeth College	Women	Luth				2	12			0	96			0	10					
	Preparatory				0	8			0	15											
	Arts and sciences				2	4			0	44			0	10							
	Special				0	5			0	76											
	Home economics								0	10											
	Music								0	54											

Do.	Roanoke College	Men	Luth.	1843			16	0			136	0			17	0			1	0	3
	Arts and sciences				16	0			136	0			17	0			1	0			
	Military drill								68	0											
Sweet Briar	Sweet Briar College	Women	Nonsect.	1906			3	23			0	299			0	18					
	Preparatory				0	12			0	116											
	Arts and sciences				3	23			0	183			0	18							
	Special								0	60											
Theological Seminary.	Protestant Episcopal Theological Seminary	Men	P. E.	1823			6	0			39	0			8	0					6
	Theology				6	0			39	0			8	0							
Williamsburg	College of William and Mary	Men	State	1693			13	0			149	0			10	0					1
	Preparatory				1	0			9	0											
	Arts and sciences				12	0			140	0			10	0							
	Summer school (1917)				12	0			67	0											
	Military drill								133	0											
WASHINGTON.																					
Pullman	State College of Washington	Coed	State	1892			98	30			783	640			72	80			3	1	
	Preparatory				9	4			127	121											
	Arts and sciences				38	11			125	172			39	46							
	Special								2	1											
	Graduate								80	68							3	1			
	Chemical engineering								13	0											
	Civil engineering				3	0			23	0											
	Electrical engineering				5	0			43	0			7	0							
	Mechanical engineering				5	0			41	0			1	0							
	Mining engineering				2	0			23	0			2	0							
	Hydro-electrical engineering								7	0			2	0							
	Agriculture				20	1			218	4			8	1							
	Architecture				2	0			8	2											
	Education				3	0			12	28			1	2							
	Home economics				0	9			0	157			0	21							
	Music				4	5			9	64			0	3							
	Veterinary				6	0			28	0			8	0							
	Pharmacy				1	0			26	23			4	7							
	Summer school (1917)				38	11			121	253											
	Short winter course								206	34											
	Extension courses				89	54			273	515											
	Correspondence courses								0	40											
	Military drill								500	0											
Seattle	University of Washington	Coed	State	1861			158	20			1,267	1,550			79	208			15	7	
	Arts and sciences				102	20			594	1,076			33	189							
	Graduate				68	2			54	62							15	7			
	Chemical engineering				33	0			80	0			7	0							
	Civil engineering				33	0			53	0			11	0							
	Electrical engineering				38	0			146	0			7	0							
	Mechanical engineering				33	0			98	0			1	0							
	Mining engineering				42	0			54	0			5	0							
	Forestry				18	0			45	1			3	0							
	Commerce								9	3			2	0							
	Journalism				8	1			72	42											

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[1] Junior college.

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
WASHINGTON—Con.																					
Seattle	University of Washington—Continued.																				
	Education				32	3			35	164											
	Library school				4	2			0	43											
	Home economics				36	11			0	209											
	Fine arts				24	6			19	174											
	Music								0	109			0	18							
	Law				8	0			46	8			5	1							
	Pharmacy				23	0			34	19			5	0							
	Summer school (1917)				91	12			277	968											
	Extension courses				13	2			214	278											
	Correspondence courses				6	2			128	137											
	Military drill								921	0											
Spokane	Gonzaga University	Men	R. C	1887			26	0			399	0			14	0					
	Preparatory				14	0			340	0											
	Arts and sciences				7	0			28	0			7	0							
	Law				5	0			31	0			7	0							
	Military drill								368	0											
Walla Walla	Whitman College	Coed	Nonsect.	1866			18	12			98	151			4	19					1
	Arts and sciences				16	7			81	144			4	19							
	Graduate								5	2											
	Special				2	5			12	5											
	Military drill								98	0											
WEST VIRGINIA.																					
Barboursville	Morris Harvey College	Coed	M. E. So				4	7			85	65									
	Preparatory				3	6			75	65											
	Arts and sciences				1	1			10	0											
Buckhannon	West Virginia Wesleyan College	Coed	M. E	1890			19	15			187	251			11	15			0	1	
	Preparatory				4	6			63	84											

	Arts and sciences				13	5			99	134			11	15			0	1			
	Special				2	4			25	33											
Elkins	Davis and Elkins College	Coed	Presb	1904			6	8			75	83			4	3					
	Preparatory				0	2			15	5											
	Arts and sciences				5	5			16	22			4	3							
	Special								4	10											
	Commerce				1	1			40	46											
Morgantown	West Virginia University	Coed	State	1868			81	12			653	333			82	24			6	0	
	Arts and sciences				42	2			294	279			48	22							
	Graduate								19	15							6	0			
	Special								13	83											
	General engineering								8	0											
	Chemical engineering								54	0											
	Civil engineering								44	0			4	0							
	Electrical engineering								41	0			4	0							
	Mechanical engineering								18	0			4	0							
	Agriculture				20	4			112	48			17	2							
	Education				2	0			4	30											
	Home economics								0	63											
	Music				3	6			9	76											
	Law				5	0			31	1			5	0							
	Medicine				7	0			31	3											
	Pharmacy				2	0			17	2											
	Summer school (1917)				23	18			142	359											
	Short winter course								5	0											
	Extension courses								1,417	0											
	Correspondence courses								54	23											
	Military drill								487	0											
WISCONSIN.																					
Appleton	Lawrence College	Coed	Nonsect.	1849			31	5			187	255			10	38					1
	Arts and sciences				31	5			186	245			10	38							
	Special								1	10											
Beloit	Beloit College	Coed	Nonsect.	1847				30	6			184	155			17	25				
	Arts and sciences				30	6			184	155			17	25							
Madison	University of Wisconsin	Coed	State	1848			380	76			2,452	1,834			462	339			107	42	2
	Arts and sciences				194	42			774	1,202			151	260							
	Graduate								228	125							100	42			
	Special								2	54											
	General engineering				46	0			247	1											
	Chemical engineering								54	0			17	0			2	0			
	Civil engineering								55	0			19	0			4	0			
	Electrical engineering								96	0			26	0							
	Mechanical engineering								74	0			31	0			1	0			
	Mining engineering								11	0			5	0							
	Agriculture				83	7			279	9			80	1							
	Commerce				6	0			486	53			76	4							
	Journalism				3	0			41	53											
	Education				6	1			35	323											
	Home economics				0	15			0	263			0	66							
	Music				7	4			3	38			0	5							
	Library school				2	5			0	34											

TABLE 27.—*Universities, colleges, and professional schools—Instructors, students, and graduates in 1917–18*—Continued.

Location.	Institution.	For men, for women, or coeducational.	Control.	Year of first opening.	Professors and instructors.		Total professors and instructors.		Students.		Total students.		First degrees.		Total first degrees.		Graduate degrees.		Total graduate degrees.		Honorary degrees.
					Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
WISCONSIN—contd.																					
Madison	University of Wisconsin—Continued.																				
	Law				8	0			78	4			16	0							
	Medicine				23	1			118	8			38	3							
	Pharmacy				2	1			28	7			3	0							
	Summer school (1917)								965	1,369											
	Short winter course								286	3											
	Extension courses				71	16			(9,388)												
	Military drill								1,177	0											
Milton	Milton College	Coed	S. D. B.	1867			10	3			75	89			1	2					3
	Arts and sciences				10	2			57	58			1	2							
	Music				1	1			18	31											
	Military drill								45	0											
Milwaukee	Marquette University	Men	R. C.	1881			233	15			1,192	326			159	3			0	1	2
	Preparatory				20	0			308	0											
	Arts and sciences				13	0			85	0			34	0			0	1			
	Special				9	0			68	27											
	Chemical engineering				17	0			2	0											
	Civil engineering				17	0			18	0			2	0							
	Electrical engineering				17	0			18	0											
	Mechanical engineering				17	0			10	0											
	Commerce				27	0			44	1											
	Journalism				14	0			12	6			1	0							
	Music				24	15			120	280			0	2							
	Law				21	0			173	6			11	0							
	Medicine				101	0			77	1			2	0							
	Dentistry				30	0			297	3			93	0							
	Pharmacy				10	0			26	2			16	1							
	Summer school (1917)				12	0			21	80											
	Short winter course				10	0			40	0											

Do.	Milwaukee—Downer College	Women	Nonsect.	1851	1	33				0	312				0	33					
	Arts and sciences				0	18			0	198			0	33							
	Special				1	15			0	62											
	Education				0	1			0	60											
	Home economics				0	5			0	116											
	Fine arts				0	4			0	156											
	Music				1	6			0	222											
	Extension courses				0	5			0	52											
Plymouth	Mission House	Coed	Ref.	1862			9	0			98	3			13	0			2	0	
	Preparatory				5	0			26	2											
	Arts and sciences				9	0			43	1			13	0			2	0			
	Theology				4	0			29	0											
Ripon	Ripon College	Coed	Nonsect.	1850			12	15			166	140			19	18			0	1	
	Arts and sciences				11	10			156	102			19	18							
	Graduate								0	1							0	1			
	Music				1	5			28	52											
Sinsinana	Saint Clara College	Women	R. C.				1	22			0	197			0	9					
	Preparatory				0	6			0	88											
	Arts and sciences				1	16			0	109			0	9							
	Summer school (1917)				0	4			0	60											
Waukesha	Carroll College	Coed	Presb.	1846			12	6			98	123			6	19					2
	Arts and sciences				11	4			80	81			6	19							
	Music				1	2			15	44											
Wauwatosa	Evangelical Lutheran Theological Seminary	Men	Luth.	1865			4	0			46	0									
	Theology				4	0			46	0											
WYOMING.																					
Laramie	University of Wyoming	Coed	State	1867			31	27			135	212			11	12					
	Preparatory				10	7			36	32											
	Arts and sciences				18	9			31	32			1	7							
	Graduate								2	0											
	Special								19	66											
	Civil engineering				2	0			5	0			2	0							
	Electrical engineering				2	0			2	0											
	Mechanical engineering				2	0			12	0			2	0							
	Mining engineering				1	0			5	0			3	0							
	Agriculture				7	0			16	0			1	0							
	Commerce				2	0			5	12											
	Education				3	8			2	44			2	1							
	Home economics				0	5			0	24			0	4							
	Music				4	2			9	33											
	Summer school (1917)				30	11			20	241											
	Short winter course								3	0											
	Extension courses								0	53											
	Correspondence courses								68	111											
	Military drill								112	0											

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships and scholarships, fees, 1917–18.*

Institutions.	Bound volumes in library.	Value of library, scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees.				
									Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ALABAMA.													
Alabama Polytechnic Institute	33,550	$185,000	$10,000	$525,000	$40,000	$284,500	19	$2,500	(1)	(1)	0	0	0
Birmingham Southern College	15,000	35,000	96,000	110,000	20,000	160,000	3	....	$70	0	0	0	0
Howard College	12,000	40,000	80,000	185,000	50,000	100,000	29	....	60	0	0	0	0
Judson College	6,000	40,000	20,000	177,000	90,000	48,000	18	....	75	0	0	0	0
Marion Institute	4,000	35,000	50,000	250,000	175,000	....	....	....	125	0	0	0	0
Alabama Girls Technical Institute	9,500	25,000	6,000	400,000	250,000	307,884	6	....	0	0	0	0	0
Woman's College of Alabama	7,592	30,390	100,000	243,681	128,681	....	27	....	90	0	0	0	0
St. Bernard College	....	....	....	....	....	....	....	....	....	....	....	....	....
Spring Hill College	21,000	20,000	75,000	225,000	45,000	....	4	....	150	0	0	0	0
Talladega College (colored)	20,000	25,000	45,000	203,125	90,000	242,489	....	....	21	0	0	0	0
University of Alabama	40,000	182,000	300,000	957,318	150,000	742,805	59	4,372	(1)	(1)	$75	$150	....
ARIZONA.													
University of Arizona	28,000	145,692	190,950	653,500	79,500	10,500	22	8,420	30	$30	30	0	0
ARKANSAS.													
Henderson-Brown College	3,500	14,200	29,000	138,200	100,000	2,000	3	....	81	0	0	0	0
Ouachita College	....	....	....	....	....	....	....	....	....	....	....	....	....
Arkansas Cumberland College	3,000	4,000	5,000	40,000	25,000	14,000	....	....	50	0	0	0	0
Central Baptist College	2,000	15,611	15,000	93,000	80,000	....	2	....	60	0	0	0	0
Hendrix College	16,245	31,600	10,000	78,000	21,750	300,576	4	....	90	0	0	0	0
Crescent College [2]	1,800	20,000	....	200,000	....	....	....	1,200	....	0	0	0	0
University of Arkansas	30,000	270,000	75,000	390,000	85,000	132,666	....	1,000	(3)	(3)	0	50	0
Arkansas Law School	1,000	....	....	....	....	....	....	....	....	....	....	....	....
St. John's Diocesan Seminary	5,000	....	....	....	....	....	....	....	0	0	0	0	0
CALIFORNIA.													
Bakersfield Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
University of California	376,353	2,845,893	....	11,400,891	102,959	5,490,430	173	46,302	(1)	(1)	(1)	150	$150

Berkeley Baptist Divinity School	2,000	1,500	15,000	22,800		63,200			0	0	0	0	0
Pacific Unitarian School for the Ministry	11,305	12,194	39,120	3,000		439,785	6		0	0	0	0	0
Pomona College	29,806	82,283	182,078	413,536	78,123	1,110,488	55	3,883	108	0	0	0	0
Fresno Junior College	3,389												
Fullerton Junior College	6,351												
Occidental College	20,000	28,729	150,000	301,513	51,463	701,357	25	2,000	100	0	0	0	0
University of Southern California	36,000	150,000	250,000	250,000		1,600,000	25	4,000	100	100	90	200	170
St. Patrick's Seminary	16,000												
Mills College	20,300	143,094	198,000	330,950	177,500	481,086	22	6,170	150	0	0	0	0
St. Mary's College	10,000	50,000	400,000	150,000					175	200	175	0	0
Throop College of Technology	7,407	128,054	166,923	287,029	25,305	592,328	6	2,614	0	150	0	0	0
University of Redlands	7,741	24,895	256,198	151,817	42,756	327,137	32	3,088	100	0	0	0	0
Sacramento Junior College													
San Francisco Theological Seminary	20,600		240,524			572,777	15	600	0	0	0	0	0
College of the Pacific	8,000	46,500	23,000	142,700	36,000	250,684	10		80	0	0	0	0
San Luis Obispo Junior College	325												
Santa Ana Junior College	6,200												
University of Santa Clara	30,000	100,000	75,000	300,000	120,000		2					0	0
Leland Stanford Junior University	298,856	(4)	(4)	5,500,000	550,978	24,663,891		2,875	54	54	105	150	0
Whittier College	5,364	18,127	85,000	60,000	5,000	150,000	7		60				
COLORADO.													
University of Colorado	106,905	390,000	200,000	940,000		80,000					50	75	0
Colorado College	74,000	159,701	252,275	709,865	175,385	1,543,057	14	1,480	80	80	0	0	0
College of the Sacred Heart	12,000	50,500	125,000	200,000	10,000				60	0	0	0	0
Iliff School of Theology	9,000			82,500		278,481			0	0	0	0	0
Colorado Agricultural College	30,000	258,825	470,000	498,955		202,783	160		0	0	0	0	0
State School of Mines	15,000	275,332	83,914	455,009					0	(5)	0	0	0
Colorado State Teachers College	51,000	126,868	170,000	452,000				1,000	18	0	0	0	0
Colorado Woman's College	1,200	13,150	20,000	180,000					60	0	0	0	0
University of Denver	37,921	75,000	228,850	423,318		323,359		11,054	100	100	100	0	160
CONNECTICUT.													
Trinity College	80,000	272,650	162,000	893,100	400,000	1,669,338	91		100	0	0	0	0
Hartford Seminary	112,000	150,000	30,000	200,000			4	1,700					
Berkeley Divinity School	33,000	6,000		85,876		581,448	20	3,666	0	0	0	0	0
Wesleyan University	111,000	220,845	82,867	1,113,231	279,664	2,530,092	6	8,810	140	0	0	0	0
Yale University	1,100,000					21,181,302	222	81,645					
Connecticut College for Women	11,070												
Connecticut Agricultural College	16,000	130,000	63,315	867,565	237,075	256,000	16	500			0	0	0
DELAWARE.													
Delaware College	26,000	258,236	400,000	974,000	219,000	473,864	2		25	25	0	0	0

[1] $20 to nonresidents.

[2] Junior college.

[3] $10 to nonresidents.

[4] Included in column 5.

[5] $150 to nonresidents.

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships and scholarships, fees, 1917–18*—Continued.

Institutions.	Bound volumes in library.	Value of library scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees.				
									Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
DISTRICT OF COLUMBIA.													
American University	30,000	$35,000	$800,000	$500,000	....	$650,000	7	$3,050	....	0	0	0	0
Catholic Sisters College	....	....	....	....	....	....	....	....	....	....	....	....	....
Catholic University of America	120,000	....	....	....	....	....	90	....	....	....	....	....	....
Gallaudet College	6,000	400,000	600,000	285,000	$11,000	....	125	....	....	0	0	0	0
Georgetown University	110,000	272,200	225,000	1,000,000	....	....	....	....	$150	....	$110	$150	$175
George Washington University	43,000	138,973	....	184,012	....	501,772	39	....	180	$180	168	175	150
Howard University (colored)	37,423	164,251	616,057	619,857	160,000	310,395	48	1,889	40	40	50	125	100
National University Law School	2,000	....	....	....	....	....	....	....	....	....	....	....	....
Trinity College	24,000	87,350	140,000	742,000	....	....	19	5,000	150	0	0	0	0
Washington College of Law	1,200	3,500	....	....	....	4,700	2	....	0	0	75	0	0
Washington Missionary College	5,000	15,909	12,752	71,070	39,756	....	....	....	58	0	0	0	0
FLORIDA.													
John B. Stetson University	28,958	88,584	....	357,276	....	1,023	4	....	105	0	45	0	0
University of Florida	32,500	97,000	185,000	426,000	100,000	....	7	1,000	0	0	40	0	0
Florida State College for Women	10,000	70,000	85,000	355,000	197,000	....	9	....	(1)	0	0	0	0
Rollins College	5,611	49,154	39,572	119,471	39,005	213,248	....	....	60	0	0	0	0
GEORGIA.													
University of Georgia	45,000	165,000	585,000	625,000	125,000	379,168	61	6,603	0	0	75	0	0
Atlanta University (colored)	14,000	22,275	102,632	160,450	75,225	142,872	....	....	24	0	0	0	0
Gammon Theological Seminary (colored)	12,500	19,500	20,000	112,745	....	481,515	....	....	0	0	0	0	0
Georgia School of Technology	12,270	180,000	150,000	450,000	76,000	200,000	25	....	....	125	0	0	0
Morehouse College (colored)	2,500	....	....	....	....	....	6	....	....	....	....	....	....
Morris Brown University (colored)	6,000	3,000	50,000	250,000	....	....	....	....	12	0	0	0	0
Cox College	5,000	39,000	36,000	100,000	....	....	....	....	....	....	....	....	....
North Georgia Agricultural College	5,000	6,000	20,000	85,000	35,000	....	....	....	10	0	0	0	0
Agnes Scott College	8,000	67,848	86,250	340,460	243,200	175,575	8	....	120	0	0	0	0
Brenau College	9,000	62,145	50,000	168,847	80,000	2,000	29	3,581	100	0	0	0	0
La Grange Female College	3,000	30,500	30,000	213,500	166,700	25,500	....	....	75	0	0	0	0
Southern Female College	2,500	2,000	....	30,000	30,000	....	5	....	50	0	0	0	0

Mercer University	20,000	46,000	75,000	200,000	50,000	500,000	100	5,000	50	......	......	......	......
Wesleyan Female College	7,059	48,510	200,000	274,284	215,000	157,256	......	......	80	0	0	0	0
Oglethorpe University	8,000	6,000	101,000	174,391	148,939	......	......	......	180	0	0	0	0
Emory University	50,000	162,300	319,000	1,168,273	213,200	2,008,500	8	7,750	60	0	120	150	0
Shorter College	6,250	30,000	50,000	300,000	225,000	42,000	......	800	100	0	0	0	0
Clark University (colored)	3,500	......	300,000	100,000	80,000	35,000	......	......	16	0	0	0	0
HAWAII.													
College of Hawaii	23,988	138,719	126,116	70,499	......	......	4	300	0	0	0	0	0
IDAHO.													
College of Idaho	6,000	16,400	10,000	104,000	48,000	116,706	......	......	30	0	0	0	0
University of Idaho	42,000	208,698	60,000	628,712	30,000	1,500,000	......	......	0	0	25	0	0
Idaho Technical Institute	8,370	39,649	59,500	197,900	57,000	......	......	......	0	0	0	0	0
ILLINOIS.													
Hedding College	4,000	25,190	23,000	142,284	29,500	385,000	20	......	80	0	0	0	0
Aurora College	5,627	21,410	15,000	96,000	36,000	49,657	6	......	60	0	0	0	0
Illinois Wesleyan University	12,000	54,600	50,250	165,500	40,000	777,857	62	9,011	80	80	61	0	0
St. Viator College	7,500	......	......	......	......	......	......	......	......	......	......	......	......
Blackburn College[2]	4,000	17,800	23,000	93,500	20,000	135,862	15	......	64	0	0	0	0
Carthage College	14,780	47,807	11,000	221,500	138,000	252,219	......	2,373	75	0	0	0	0
Armour Institute of Technology	27,793	51,047	175,000	400,000	......	2,500,000	30	10,750	0	175	0	0	0
Bethany Bible School	2,000	8,300	42,500	180,000	146,400	......	4	259	0	0	0	0	0
Central States College of Pharmacy	380	6,500	......	......	......	......	......	......	(3)	0	0	0	0
Chicago-Kent Law School	5,000	......	......	......	......	......	2	......	......	......	......	......	......
Chicago Theological Seminary	33,000	40,000	42,000	90,000	......	821,758	75	2,281	0	0	0	0	0
Chicago Veterinary College	1,500	22,000	......	50,000	......	......	......	......	0	0	0	135	0
Evangelical Lutheran Theological Seminary	12,000	12,000	15,000	185,000	30,000	200,000	19	1,800	0	0	0	0	0
Hahnemann Medical College	3,000	30,713	......	325,200	......	672,307	6	605	0	0	0	192	0
Hamilton College of Law	4,500	8,000	......	......	......	......	12	......	0	75	0	0	0
Lewis Institute	24,000	340,097	118,280	404,336	......	1,082,744	4	500	0	45	0	0	0
Loyola University	60,000	150,000	425,000	481,000	......	13,000	12	......	60	125	75	150	0
McCormick Theological Seminary	44,410	......	548,190	......	......	1,962,614	98	15,109	0	0	0	0	0
University of Chicago	545,890	2,015,514	4,667,708	6,740,937	681,899	24,797,632	120	116,432	120	0	150	180	0
Western Theological Seminary	20,000	50,000	40,000	120,000	20,000	375,000	1	300	0	0	0	0	0
James Millikin University	10,700	85,000	100,000	434,200	48,000	250,000	6	800	75	0	0	0	0
Eureka College	15,500	28,500	16,500	156,750	20,000	189,653	30	1,668	65	0	0	0	0
Garrett Biblical Institute	49,734	28,678	......	......	......	642,673	16	1,630	0	0	0	0	0
Northwestern University	112,000	729,685	758,532	2,189,341	490,493	5,082,415	118	24,218	150	150	160	180	200
Norwegian-Danish Theological Seminary	1,200	......	......	......	......	......	......	......	0	0	0	0	0
Swedish Theological Seminary	1,500	2,000	28,500	40,625	......	42,188	......	......	0	0	0	0	0
Knox College	15,079	65,838	206,400	341,998	67,515	809,672	19	2,456	100	0	0	0	0
Lombard College	11,038	27,084	......	166,743	60,000	105,000	36	......	90	0	0	0	0
Monticello Seminary[2]	5,800	54,288	12,000	417,037	391,838	122,346	7	1,500	......	0	0	0	0
Greenville College	5,500	9,280	31,966	79,628	......	......	......	......	60	0	0	0	0
Illinois College	19,000	32,210	112,735	178,075	74,600	408,943	......	5,901	40	0	0	0	0

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[1] $20 to nonresidents.

[2] Junior college.

[3] Pharmacy, $90.

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships and scholarships, fees, 1917–18*—Continued.

Institutions.	Bound volumes in library.	Value of library scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees.				
									Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ILLINOIS—continued.													
Illinois Woman's College	9,200	$16,719	$59,595	$372,539	$200,000	$214,171	25		$125	0	0	0	0
Joliet Junior College	5,500								90	0	0	0	0
Lake Forest College	45,000						50						
McKendree College	13,000	50,000	25,000	200,000	100,000	204,977	20		60	0	0	0	0
Lincoln College	5,300		20,000	80,000	10,000	106,850			45	0	0	0	0
Monmouth College	12,000	37,000	25,100	299,500	115,000	291,154	130		56	0	0	0	0
Frances Shimer College[1]	2,077	13,517	35,000	124,083	56,000	104,302		$3,790		0	0	0	0
Evangelical Theological Seminary	3,500	1,666		31,741		79,972			0	0	0	0	0
Northwestern College	12,500	52,856	48,127	141,249		256,010	7	420	60	0	0	0	0
Bradley Polytechnic Institute	18,000	140,000	156,000	426,750	4,750	2,225,000	6	600	60	$60	0	0	0
Rockford College	8,000	69,710	50,000	282,345	213,475	243,310	44	8,775	125	0	0	0	0
Augustana College	26,129	50,547	125,795	355,000	75,000	471,528	15	767	56	0	0	0	0
Concordia Theological Seminary	3,000	10,000	9,000	15,000					0	0	0	0	0
Shurtleff College	15,000	12,000	2,300	70,223	27,223	183,683			66	0	0	0	0
University of Illinois	410,573	2,158,365	860,659	3,877,932	180,247	649,012	790	12,235	0	0	0	$120	$150
Wheaton College	10,512	24,057	63,070	219,685	46,487	220,020	31	941	60	0	0	0	0
INDIANA.													
Indiana University	121,718	214,400	223,600	1,120,000		878,400		4,400	[2]	0	$30	100	0
Wabash College	54,000	92,731	82,500	233,800		810,955			60	0	0	0	0
Earlham College	21,537	65,600	80,000	236,100	106,100	545,931	50		75	0	0	0	0
Franklin College	20,000	57,460	37,657	184,876	50,000	386,863	6	1,754	75	0	0	0	0
Goshen College	5,500	13,300	32,140	104,000	17,000				50	0	0	0	0
De Pauw University	48,000	95,000	61,400	809,000	285,000	1,504,604			100	0	0	0	0
Hanover College	30,000	47,300	5,200	148,200	28,200	258,842			45	0	0	0	0
Butler College	15,000	38,000	108,670	135,500		421,000	1		80	0	0	0	0
Indiana Central University	2,500	15,000		70,000		250,000	4		52	0	0	0	0
Indiana Dental College	600												175
Indianapolis College of Pharmacy	1,000												
Indiana Veterinary College	100		12,000	40,000					0	0	0	125	0
Purdue University	49,464	540,000	200,000	1,600,000		440,000			[2]		0	0	0
St. Mary's College and Academy	10,333	181,074	144,050	720,995						0	0	0	0

University of Notre Dame	100,000	150,000	800,000	1,500,000	500,000	....	36	....	....	....	....	....	....
St. Meinrad Seminary	34,000	85,000	55,000	110,000	....	....	....	....	0	0	0	0	0
Rose Polytechnic Institute	18,000	275,000	125,000	150,000	....	850,000	....	....	0	(4)	0	0	0
Vincennes University	10,000	50,000	86,050	120,000	....	125,000	10	....	36	0	0	0	0
IOWA.													
Iowa State College of Agriculture and Mechanic Arts	66,100	1,148,638	261,841	2,844,922	....	689,530	17	....	....	....	....	....	....
Iowa State Teachers College	51,000	218,600	42,055	1,000,000	230,000	....	....	....	(5)	0	0	0	0
Coe College	15,278	106,367	150,000	392,751	165,000	1,011,076	70	3,350	60	0	0	0	0
Wartburg College	6,000	20,000	16,000	120,000	....	....	....	....	40	0	0	0	0
Luther College	26,784	48,000	10,100	192,500	160,000	286,659	....	....	25	0	0	0	0
Des Moines College	10,000	150,000	50,000	300,000	150,000	250,000	....	....	120	120	0	0	0
Drake University	31,087	158,225	200,000	380,000	....	834,100	250	15,555	120	0	150	0	0
Dubuque College, Fourteenth street	9,500	270,000	83,900	843,538	506,800	1,000,000	....	....	....	0	0	0	0
Dubuque College and Seminary	11,446	86,410	85,314	487,550	....	347,852	....	....	....	0	0	0	0
Mount St. Joseph College	6,000	100,000	100,000	400,000	....	300,000	3	....	80	0	0	0	0
Wartburg Theological Seminary	8,500	33,000	7,000	185,000	30,000	25,291	....	....	0	0	0	0	0
Parsons College	15,000	55,200	29,605	189,421	20,000	238,647	20	....	40	0	0	0	0
Grinnell College	59,000	249,169	235,526	1,096,973	570,000	1,276,558	6	13,418	100	0	0	0	0
Simpson College	12,000	30,000	50,000	239,500	27,500	282,500	60	....	70	0	0	0	0
State University of Iowa	147,349	1,207,611	508,453	2,692,586	200,000	336,813	64	7,830	20	(6)	50	(7)	90
Ellsworth College	9,544	29,000	23,000	122,000	72,000	190,000	9	....	71	0	0	0	0
Graceland College[1]	9,000	21,293	21,700	37,409	11,704	....	30	....	60	0	0	0	0
Iowa Wesleyan College	17,100	12,500	25,000	233,000	50,000	700,000	150	2,500	108	0	0	0	0
Cornell College	46,380	95,019	66,584	346,199	41,627	1,057,153	130	6,471	80	0	0	0	0
Cedar Valley Junior College	5,000	5,000	30,000	50,000	8,000	200,000	....	....	60	0	0	0	0
Penn College	7,900	30,000	40,500	250,000	100,000	231,000	6	....	100	0	0	0	0
Central University of Iowa	8,000	17,000	30,000	71,800	19,000	58,391	....	....	45	0	0	0	0
Morningside College	20,000	61,074	77,975	230,290	....	402,476	15	2,857	70	0	0	0	0
KANSAS.													
Midland College	12,000	40,000	20,000	175,000	50,000	90,000	....	....	60	0	0	0	0
St. Benedict's College	50,000	....	....	....	....	....	....	....	....	....	....	....	....
Baker University	33,300	119,790	42,132	250,545	....	619,633	17	1,350	58	0	0	0	0
College of Emporia	15,000	30,000	25,000	156,000	45,000	83,046	9	....	60	0	0	0	0
Highland College	5,500	10,000	20,000	40,000	10,000	40,000	....	....	50	0	0	0	0
Campbell Junior College	2,500	3,500	20,000	50.000	....	....	....	....	45	0	0	0	0
Kansas Baptist Theological Seminary	6,000	7,500	15,000	35,000	....	25,000	....	....	0	0	0	0	0
Kansas City University	5,000	15,000	40,000	125,000	60,000	....	....	....	50	0	0	0	0
University of Kansas	120,109	500,000	500,000	1,250,000	....	....	45	....	10–20	10–20	25–35	25–35	0
Bethany College	10,500	64,293	36,500	117,276	32,500	177,537	30	....	60	0	0	0	0
McPherson College	6,000	15,000	45,000	108,000	50,000	201,000	24	876	60	0	0	0	0
Kansas State Agricultural College	61,360	629,677	538,210	988,684	....	491,746	15	3,000	10	10	0	0	0
Ottawa University	9,600	25,800	79,240	100,000	10,000	288,352	24	650	60	0	0	0	0
St. Mary's College	27,290	25,000	100,000	355,000	....	....	....	....	75	0	0	0	0
Kansas Wesleyan University	12,500	30,000	118,400	136,000	30,000	113,595	....	....	50	0	0	0	0
Cooper College	6,500	15,000	18,000	64,000	6,000	133,600	7	....	50	0	0	0	0

[1] Junior college.
[2] $20 to residents; $60 to nonresidents.
[3] $25 to nonresidents.
[4] $75 to nonresidents of Vigo County.
[5] $20 to nonresidents.
[6] $20 to residents; $40 to nonresidents.
[7] $85 to residents; $100 to nonresidents.

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships and scholarships, fees, 1917–18*—Continued.

Institutions.	Bound volumes in library.	Value of library scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees.				
									Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
KANSAS—continued.													
Washburn College	26,000	$71,481	$277,474	$286,368	$25,000	$454,322	24	$2,218	$75	0	$80	0	0
Fairmount College	32,000	...	...	...	...	...	8	...	...	...	...	...	...
Friends University	7,000	7,000	80,000	230,000	...	199,139	...	...	63	0	0	0	0
Southwestern College	6,000	21,700	32,000	134,000	7,000	500,000	22	...	60	0	0	0	0
KENTUCKY.													
Berea College	35,000	286,191	195,287	879,050	428,673	1,244,790	183	8,773	21	0	0	0	0
Ogden College	10,000	25,000	75,000	10,000	...	150,000	...	500	25	0	0	0	0
Central University of Kentucky	32,000	100,000	70,000	500,000	150,000	623,000	41	...	75	0	0	0	0
Kentucky College for Women	2,233	7,000	1,100	240,000	180,000	...	...	...	75	0	0	0	0
Georgetown College	10,000	25,050	75,000	175,000	58,000	281,202	...	...	60	0	0	0	0
Transylvania College	23,000	52,035	320,000	199,586	46,918	419,126	41	280	55	0	0	0	0
University of Kentucky	33,869	211,666	227,749	697,685	50,000	187,185	11	1,550	17	$17	17	0	0
Louisville College of Pharmacy	1,200	6,277	18,000	22,000	...	...	...	...	0	0	0	0	0
Presbyterian Theological Seminary of Kentucky	20,827	25,000	60,000	195,000	...	535,000	25	...	0	0	0	0	0
Southern Baptist Theological Seminary	27,000	25,000	65,000	205,000	75,000	1,300,000	...	...	0	0	0	0	0
University of Louisville	6,157	45,000	62,000	222,000	...	...	56	800	100	0	100	$155	$200
Bethel College	5,000	10,000	30,000	100,000	30,000	84,000	...	...	80	0	0	0	0
St. Mary's College	6,000	15,000	60,000	75,000	40,000	...	2	...	40	0	0	0	0
Kentucky Wesleyan College	7,000	35,000	15,000	144,500	39,000	115,000	...	...	50	0	0	0	0
LOUISIANA.													
Louisiana State University and Agricultural and Mechanical College	48,450	272,901	177,341	573,789	...	318,713	...	...	...	...	...	...	...
Mansfield Female College[1]	1,000	6,000	9,000	50,000	...	...	...	...	...	...	...	...	...
H. Sophie Newcomb Memorial College	14,400	54,000	90,000	259,660	82,000	2,765,000	...	...	...	...	...	...	...
Loyola University	...	50,000	215,000	300,000	...	...	...	...	80	0	100	0	150
Tulane University of Louisiana	74,711	419,645	701,121	1,707,661	371,933	3,714,856	353	4,794	100	100	105	150	150
Louisiana College	2,500	17,166	18,586	72,191	61,000	...	22	1,500	63	0	0	0	0

MAINE.													
Bowdoin College	118,344	180,389	....	1,075,373	101,000	2,401,053	2	11,022	100	0	0	100	0
Bates College	42,720	52,102	112,000	403,069	136,800	1,021,313	111	....	80	0	0	0	0
University of Maine	56,000	238,015	11,000	712,346	163,487	252,050	6	....	(2)	....	....	....	....
Colby College	52,000	45,293	....	....	....	512,886	....	....	....	....	....	....	....
MARYLAND.													
St. John's College	14,000	50,000	....	250,000	100,000	....	125	....	100	0	0	0	0
United States Naval Academy	55,000	1,095,600	2,490,100	9,491,900	....	....	....	....	....	....	....	....	....
Baltimore College of Dental Surgery	570	700	....	100,000	....	....	....	....	....	....	....	....	150
Goucher College	32,500	92,197	236,320	1,280,296	442,761	872,108	10	10,305	175	0	0	0	0
Johns Hopkins University	208,237	633,461	775,000	2,175,715	....	6,503,187	258	....	....	....	....	....	....
Morgan College (colored)	5,800	15,862	87,238	69,600	18,000	57,575	9	1,000	....	0	36	0	0
Mount St. Joseph's College	2,500	10,000	....	233,700	....	....	....	....	....	0	0	0	0
St. Mary's Seminary	45,000	300,000	400,000	200,000	....	....	....	....	0	0	0	0	0
University of Maryland, Dental Department	15,000	....	....	50,000	....	....	....	....	....	....	....	....	150
Washington College	....	....	30,000	220,000	50,000	....	55	....	50	0	0	0	0
Maryland State College of Agriculture	17,500	161,468	85,800	573,397	115,000	....	98	0	0	0	0	0	0
Rock Hill College	5,000	17,700	26,000	49,000	24 000	....	....	....	100	0	0	0	0
Mount St. Mary's College	15,000	50,000	43,200	500,000	....	....	9	....	....	....	....	....	....
Hood College	6,600	24,000	17,500	159,400	68,000	44,500	12	1,925	125	0	0	0	0
Maryland College for Women	4,000	25,000	40,000	150,000	....	....	....	....	....	....	....	....	....
Blue Ridge College	8,000	21,200	14,000	97,000	....	89,000	27	....	70	0	0	0	0
Western Maryland College	10,000	26,000	50,000	325,000	100,000	....	54	....	60	0	0	0	0
Westminster Theological Seminary	2,500	1,000	5,000	25,000	15,000	9,187	....	1,209	0	0	0	0	0
MASSACHUSETTS.													
Amherst College	120,000	188,000	89,831	1,232,900	210,000	3,860,327	4	....	140	....	....	....	....
Massachusetts Agricultural College	57,802	592,836	122,718	999,389	60,127	361,000	....	....	(3)	0	0	0	0
Boston University	64,000	102,279	....	1,275,541	....	1,508,194	....	8,459	150	0	150	160	0
Massachusetts College of Pharmacy	7,600	34,640	135,000	450,000	....	241,490	5	415	(4)	0	0	0	0
Portia School of Law	1,000	3,000	....	....	....	....	....	....	0	0	60	0	0
St. John's Seminary	21,000	43,500	50,000	362,500	....	....	....	....	0	0	0	0	0
Simmons College	28,689	76,500	443,606	818,025	241,649	1,946,444	48	4,473	125	0	0	0	0
Suffolk Law School	1,000	2,000	42,000	....	....	....	3	....	0	0	60-75	0	0
Andover Theological Seminary	66,600	....	....	293,616	....	....	....	....	(5)	0	0	0	0
Episcopal Theological Seminary	18,000	....	....	....	....	....	....	....	....	....	....	....	....
Harvard University	1,241,500	....	....	....	....	33,742,954	537	143,353	200	200	150	225	200
Massachusetts Institute of Technology	129,811	1,575,000	2,568,000	6,092,000	331,000	9,616,000	332	35,000	0	250	0	0	0
New Church Theological School	8,500	2,000	....	100,000	....	226,007	....	....	0	0	0	0	0
Radcliffe College	42,832	60,000	358,000	575,000	300,000	1,700,000	65	10,540	200	0	0	0	0
Boston College	55,000	30,000	....	1,000,000	....	241,200	22	....	100	0	0	0	0
Lowell Textile School	1,028	291,519	106,639	328,728	....	....	....	....	0	130	0	0	0
Newton Theological Institution	....	100,000	....	250,000	90,000	980,000	....	....	0	0	0	0	0
Smith College	70,740	434,650	475,040	1,683,621	620,537	1,852,299	206	22,931	150	0	0	0	0
Wheaton College	11,074	103,059	10,650	468,965	154,000	1,088,407	8	1,800	150	0	0	0	0

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[1] Junior college.

[2] $30 to residents; $100 to nonresidents.

[3] $60 agriculture.

[4] Pharmacy, $100.

[5] Theology, $150.

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships and scholarships, fees, 1917-18*—Continued.

Institutions.	Bound volums in library.	Value of library scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees.				
									Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
MASSACHUSETTS—continued.													
Mount Holyoke College	69,000	$337,713	$137,096	$1,995,906	$807,554	$1,454,169	75	$13,167	$175	0	0	0	0
Tufts College	75,000	200,000	1,495,341	....	243,191	3,349,906	....	10,467	125	$175	0	$155	$155
Wellesley College	85,469	779,648	373,211	2,802,803	1,688,597	2,439,079	93	18,196	175	0	0	0	0
Williams College	91,097	132,082	121,175	1,841,979	511,833	2,791,944	6	10,878	150	0	0	0	0
Clark College	75,000	....	....	....	....	1,300,000	....	....	50	0	0	0	0
Clark University	83,000	250,000	200,000	334,500	....	2,400,000	....	2,440	100	0	0	0	0
College of the Holy Cross	40,000	50,000	195,000	610,000	260,000	110,675	27	4,330	145	0	0	0	0
Worcester Polytechnic Institute	16,328	411,306	....	560,581	....	948,875	156	14,130	0	150	0	0	0
MICHIGAN.													
Adrian College	8,000	....	....	150,000	....	....	4	....	85	0	0	0	0
Albion College	25,000	92,500	35,000	202,700	....	421,734	21	1,100	50	0	0	0	0
Alma College	27,180	33,825	36,000	139,581	79,400	423,623	46	1,085	40	0	0	0	0
University of Michigan	401,005	2,412,858	791,462	4,493,591	431,053	1,326,412	62	13,878	(1)	(2)	(3)	(4)	(5)
Detroit College of Law	2,500	....	....	....	....	....	....	....	....	....	....	....	....
Detroit College of Medicine and Surgery	....	20,000	80,000	100,000	....	....	10	....	150	....	....	....	....
Detroit Junior College	6,000	....	....	....	....	....	....	....	....	....	....	....	....
University of Detroit	18,000	75,000	250,000	250,000	....	....	6	....	95	100	$75	0	0
Michigan Agricultural College	43,000	226,000	110,377	1,239,650	204,000	1,000	9	....	(6)	0	0	0	0
Grand Rapids Junior College	....	....	....	....	....	....	....	....	40	0	0	0	0
Hillsdale College	23,700	35,732	10,000	175,000	25,000	407,728	....	500	40	0	0	0	0
Hope College	25,000	....	....	175,000	....	418,381	....	....	24	....	....	....	....
Western Theological Seminary	....	....	....	....	....	....	....	....	....	....	....	....	....
Michigan College of Mines	28,299	340,091	104,025	336,168	....	....	5	....	0	(7)	0	0	0
Kalamazoo College	15,000	35,218	55,000	121,830	55,000	690,823	....	....	46	0	0	0	0
Olivet College	35,000	86,758	20,000	218,855	50,000	39,800	9	727	75	0	0	0	0
MINNESOTA.													
St. John's University	40,000	85,000	....	....	....	....	....	....	....	....	....	....	....
Seabury Divinity School	25,000	75,000	30,000	110,000	40,000	460,000	30	4,650	0	0	0	0	0
Hibbing Junior College	....	....	....	....	....	....	....	....	0	0	0	0	0

Augsburg Seminary	6,000	10,000	125,000	...	...	45,964	...	...	30	0	0	0	0
University of Minnesota	289,110	2,060,912	2,656,420	6,090,417	655,550	1,785,570	279	109,160	(1)	60	65	150	100
Carleton College	32,000	125,380	193,717	785,098	303,897	935,822	23	2,740	130	0	0	0	0
St. Olaf College	13,320	48,384	48,320	218,700	117,000	302,158	...	1,015	60	0	0	0	0
Rochester Junior College	2,000	...	...	...	...	...	...	...	...	...	...	...	...
Bethel Theological Seminary	4,350	15,042	20,000	105,812	...	...	5	95	0	0	0	0	0
College of St. Catherine	15,000	132,000	100,000	740,000	300,000	3,500	...	...	50	0	0	0	0
College of St. Thomas	12,000	27,000	155,000	425,000	170,000	103,000	...	...	80	0	0	0	0
Hamlin University	18,200	31,000	30,000	210,000	55,000	818,000	5	6,000	80	0	0	0	0
Luther Theological Seminary	12,000	...	...	281,478	...	159,698	...	...	0	0	0	0	0
Macalester College	14,500	41,187	110,800	211,209	111,709	561,653	13	...	75	0	0	0	0
St. Paul Theological Seminary	30,000	...	...	...	...	...	...	...	...	...	...	...	...
St. Paul College of Law	550	300	...	...	...	17,300	...	...	0	0	80	0	0
Gustavus Adolphus College	14,000	45,000	15,000	175,000	45,000	204,950	...	...	50	0	0	0	0
College of St. Teresa	10,000	211,000	40,500	810,000	310,000	...	24	...	100	0	0	0	0
MISSISSIPPI.													
Mississippi Agricultural and Mechanical College	30,125	455,969	157,520	810,090	204,150	...	10	1,975	...	...	...	...	...
Whitworth Female College	...	...	...	...	...	...	...	...	...	...	...	...	...
Mississippi Industrial Institute and College	11,000	68,676	195,000	458,600	203,000	...	...	5,000	(9)	0	0	0	0
Grenada College	1,500	10,000	20,000	80,000	70,000	...	...	...	50	0	0	0	0
Mississippi Synodical College [10]	1,000	10,000	6,000	55,000	...	...	21	...	52	0	0	0	0
Rust College (colored)	2,500	6,000	4,500	105,000	75,000	9,000	2	150	16	0	0	0	0
Belhaven College	3,800	8,000	50,000	100,000	60,000	10,000	20	1,800	50	0	0	0	0
Millsaps College	15,800	15,000	100,000	268,500	...	560,000	7	...	40	0	60	0	0
Meridian College	10,600	50,000	50,000	200,000	...	...	30	...	50	0	0	0	0
University of Mississippi	31,000	110,000	100,000	465,000	60,000	700,000	6	720	0	0	60	60	0
MISSOURI.													
Culver-Stockton College	9,000	20,000	20,000	160,000	55,000	232,000	...	...	50	0	0	0	0
Clinton Theological Seminary	4,430	2,343	24,366	54,153	...	...	...	...	75	0	0	0	0
Stephens College [10]	3,300	22,000	80,000	200,000	125,000	45,500	25	2,000	100	0	0	0	0
University of Missouri	223,470	1,193,670	801,385	1,987,470	...	1,309,339	...	...	...	...	...	...	...
Central College	12,162	37,500	35,000	255,000	100,000	469,340	2	250	40	0	0	0	0
Howard-Payne College	4,000	...	...	...	...	...	10	...	...	...	...	...	...
Synodical College for Girls [10]	3,500	10,000	15,000	75,000	40,000	25,000	4	...	100	0	0	0	0
Westminster College	10,000	27,061	50,000	204,703	36,206	249,304	15	750	75	0	0	0	0
William Woods College [10]	4,800	16,000	10,000	200,000	120,000	353,601	12	...	...	0	0	0	0
Kansas City School of Law	7,000	40,000	...	...	...	...	8	...	0	0	80	0	0
Kansas City College of Pharmacy	180	...	...	...	...	...	...	...	0	0	0	0	0
Kansas City Dental College	500	15,000	...	...	...	...	...	...	0	0	0	0	150
Kansas City Polytechnic Institute [10]	4,246	76,600	200,000	234,000	...	...	...	...	0	0	0	0	0
Western Dental College	171	...	...	...	...	...	...	...	0	0	0	0	150
William Jewell College	29,690	45,342	77,908	396,368	129,765	263,371	10	...	60	0	0	0	0

[1] $47 to residents; $67 to nonresidents.
[2] $62 to residents; $92 to nonresidents.
[3] $72 to residents; $82 to nonresidents.
[4] $105 to residents; $125 to nonresidents.
[5] $112 to residents; $132 to nonresidents.
[6] $45 to nonresidents.
[7] $25 to residents; $150 to nonresidents.
[8] $40 to residents; $80 to nonresidents.
[9] $50 to nonresidents.
[10] Junior college.

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships and scholarships, fees, 1917–18*—Continued.

Institutions.	Bound volumes in library.	Value of library scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees.				
									Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
MISSOURI—continued.													
Missouri Valley College	16,917	$83,739	$50,000	$133,880	$24,000	$326,000	2	$375	$58	0	0	0	0
Hardin College[1]	1,970	24,500	40,000	140,000	60,000	100,000	....	....	100	0	0	0	0
Scarritt-Morrisville College[1]	3,000	4,000	4,000	40,000	15,000	23,000	....	....	50	0	0	0	0
Cottey College[1]	2,600	55,275	18,400	150,000	....	15,000	3	....	100	0	0	0	0
Park College	19,550	115,000	178,000	317,800	100,000	677,913	....	....	50	0	0	0	0
St. Joseph Veterinary College	....	....	....	....	....	....	....	....	....	....	....	....	....
City College of Law and Finance	350	1,500	....	....	....	....	....	....	0	0	$80	0	0
Concordia Theological Seminary	11,231	50,000	50,000	300,000	....	....	....	....	0	0	0	0	0
Eden Theological Seminary	5,983	10,000	40,000	100,000	....	83,300	....	....	0	0	0	0	0
Forest Park College[1]	3,000	10,000	120,000	90,000	....	....	....	....	75	0	0	0	0
St. Louis College of Physicians and Surgeons	....	50,000	....	100,000	....	....	....	....	0	0	0	$140	0
St. Louis University	80,014	....	....	1,250,000	....	....	8	....	80	0	100	160	$150
Washington University	163,419	1,151,277	840,650	3,711,984	662,917	8,196,051	193	....	150	$150	100	200	150
Drury College	33,000	80,000	250,000	260,000	45,000	240,000	12	....	65	0	0	0	0
Central Wesleyan College	10,800	29,500	50,000	123,000	35,000	254,192	10	1,125	60	0	0	0	0
Kendrick Seminary	20,000	....	373,000	850,000	....	....	....	....	0	0	0	0	0
MONTANA.													
Montana College of Agriculture and Mechanic Arts	16,314	248,442	91,773	333,145	45,000	680,250	72	....	0	0	0	0	0
Montana State School of Mines	9,000	51,000	....	152,000	....	....	....	....	0	0	0	0	0
University of Montana	42,000	134,790	120,000	220,100	30,000	....	....	300	0	0	0	0	0
NEBRASKA.													
Union College	6,500	18,000	23,300	148,563	65,000	....	....	....	75	0	0	0	0
Doane College	14,000	31,557	76,446	120,850	30,000	320,458	7	868	40	0	0	0	0
Hastings College	5,975	22,383	40,800	96,335	43,221	332,781	30	....	50	0	0	0	0
University of Nebraska	138,500	716,848	951,639	2,346,018	20,000	871,507	12	2,100	0	0	45	110	150
Creighton University	47,500	106,000	400,000	550,000	40,000	2,750,000	....	....	0	0	150	140	150
Presbyterian Theological Seminary	7,000	10,000	30,000	75,000	150,000	....	....	....	0	0	0	0	0

University of Omaha	1,500	12,300	15,000	100,000	...	3,100	...	3	80	0	0	0	0
Nebraska Wesleyan University	10,000	53,066	161,214	250,000	...	295,811	...	...	60	0	0	0	0
York College	2,500	...	...	100,000	20,000	100,000	...	5	65	0	0	0	0
NEVADA.													
University of Nevada	31,000	236,887	415,298	280,970	72,516	330,554	7	...	0	0	0	0	0
NEW HAMPSHIRE.													
New Hampshire College of Agriculture and Mechanic Arts	35,000	40,000	87,000	520,000	115,000	950,000	391	...	60	...	0	0	0
Dartmouth College	140,000	350,000	400,000	2,000,000	800,000	3,438,951	356	17,460	140	140	0	140	0
St. Anselmis College	7,000	...	...	...	...	...	5	...	...	...	...	...	...
NEW JERSEY.													
Bloomfield Theological Seminary	5,410	11,933	15,201	92,105	27,500	342,285	...	793	0	0	0	0	0
College of St. Elizabeth	27,000	90,000	900,000	550,000	250,000	...	7	5,000	150	0	0	0	0
Stevens Institute of Technology	12,000	160,000	735,000	725,000	75,000	1,550,000	27	...	0	225	0	0	0
St. Peters College	30,000	80,000	10,000	200,000	...	15,000	10	...	60	0	0	0	0
Upsala College	3,000	4,615	58,000	18,000	8,000	8,000	...	...	45	0	0	0	0
Drew Theological Seminary	132,000	135,000	100,000	650,000	160,000	825,000	13	1,500	0	0	0	0	0
New Jersey Law School	1,500	2,500	...	30,000	...	...	8	...	0	0	130	0	0
Rutgers College	93,720	• 279,000	454,500	1,049,579	221,500	891,277	308	3,223	170	170	0	0	0
Theological Seminary of the Reformed Church of America	54,000	200,000	60,000	200,000	...	670,000	2	183	0	0	0	0	0
Princeton Theological Seminary of the Presbyterian Church	101,706	...	659,555	...	...	3,154,151	...	...	...	...	...	...	...
Princeton University	410,722	...	...	...	...	6,565,010	207	11,650	200	200	0	0	0
NEW MEXICO.													
University of New Mexico	13,000	57,295	45,000	190,085	33,500	20,761	...	...	20	0	0	0	0
New Mexico School of Mines	2,200	22,713	8,000	75,000	15,000	...	6	1,220	0	0	(²)	0	0
New Mexico College of Agriculture and Mechanic Arts	18,323	200,000	30,000	100,000	25,000	...	...	...	18	18	0	0	0
NEW YORK.													
New York State College for Teachers	4,802	363,000	100,000	450,000	...	...	200	...	(³)	0	0	0	0
Alfred University	30,000	58,500	18,000	164,500	40,000	425,926	56	4,435	70	0	0	0	0
St. Stephen's College	20,500	20,000	25,000	250,000	200,000	81,835	25	...	...	0	0	0	0
Auburn Theological Seminary	38,400	35,000	45,000	320,000	50,000	1,293,556	...	12,098	0	0	0	0	0
Wells College	32,300	142,630	10,000	398,939	146,875	627,244	24	4,637	175	0	0	0	0
Adelphi College	17,000	83,084	60,000	314,348	...	284,375	19	...	...	...	...	...	...
Brooklyn College of Pharmacy	4,000	16,100	8,500	30,000	...	...	1	...	0	0	0	0	0
College of St. Francis Xavier	10,000	197,566	270,000	280,000	...	...	...	...	100	0	0	0	0
Long Island College Hospital	3,000	150,000	135,000	1,061,500	...	595,628	3	...	0	0	0	250	0
Polytechnic Institute of Brooklyn	12,000	103,485	525,000	383,134	...	804,118	...	400	0	225	0	0	0

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[1] Junior college.

[2] $10 to residents; $30 to nonresidents.

[3] $40 to nonresidents.

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships and scholarships, fees, 1917–18*—Continued.

Institutions.	Bound volumes in library.	Value of library scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees.				
									Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
NEW YORK—continued.													
Canisius College	40,000	$100,000	$125,000	$250,000	....	$105,000	34	....	$60	0	0	0	0
D'Youville College	7,270	116,690	175,000	50,000	....	....	....	....	150	0	0	0	0
University of Buffalo	25,931	130,474	343,250	352,835	....	532,261	6	....	100	0	$100	$200	$215
St. Lawrence University	25,477	66,300	66,000	337,000	....	770,889	100	$6,000	60	0	120	0	0
Hamilton College	77,055	91,961	80,000	650,000	$155,000	1,198,655	102	250	120	0	0	0	0
Elmira College	14,144	....	....	425,234	....	247,114	....	....	....	0	0	0	0
Mount St. Alphonsus Theological Seminary	30,000	....	....	....	....	....	....	....	0	0	0	0	0
De Lancy Divinity School	3,957	5,000	2,000	2,000	....	76,320	2	....	0	0	0	0	0
Hobart College	60,000	85,000	65,000	379,980	122,000	738,261	17	10,071	100	0	0	0	0
Colgate University	84,858	170,778	125,000	625,000	150,000	2,213,861	....	14,982	110	0	0	0	0
Hartwick Seminary	6,000	6,500	25,000	20,000	18,000	6,000	3	....	0	0	0	0	0
Cornell University	557,931	2,674,926	373,259	6,626,095	1,080,065	14,221,996	60	18,169	150	$150	150	150	0
College of New Rochelle	4,500	45,950	79,557	375,125	....	....	30	....	150	0	0	0	0
Barnard College	11,500	98,559	2,025,000	875,000	267,402	1,802,974	109	600	200	0	0	0	0
Bible Teacher's Training School	10,500	29,200	264,000	214,900	208,600	58,800	11	3,717	0	0	0	0	0
College of the City of New York	73,500	710,989	2,560,400	4,082,444	....	....	....	17,300	0	0	0	0	0
Columbia University	711,416	3,676,508	....	14,075,984	1,021,361	34,970,290	303	126,712	....	....	....	....	....
Fordham University	72,000	189,000	1,600,000	560,000	100,000	82,216	36	12,682	110	0	125	225	0
General Theological Seminary of the Protestant Episcopal Church in the United States	63,263	62,763	1,027,000	1,057,849	478,507	2,221,003	60	22,530	0	0	0	0	0
Hunter College of the City of New York	23,540	25,000	2,000,000	1,075,000	....	....	....	....	0	0	0	0	0
Jewish Theological Seminary of America	54,308	84,351	25,000	100,000	....	760,655	11	4,768	0	0	0	0	0
Manhattan College	18,838	37,500	541,000	215,000	....	....	....	....	120	130	0	0	0
New York College of Dentistry	1,000	51,286	81,130	....	....	....	....	....	0	0	0	0	205
New York University	137,799	418,714	1,264,950	2,320,023	....	1,293,302	79	....	....	....	....	....	....
Teachers College	66,296	....	....	....	....	....	84	....	....	....	....	....	....
Union Theological Seminary	138,263	....	....	353,660	....	....	68	11,558	0	0	0	0	0
Clarkson College of Technology	5,600	57,066	28,177	124,169	....	356,500	....	....	0	100	0	0	0
Vassar College	98,647	505,911	108,700	3,194,315	1,425,172	2,631,143	85	25,498	150	0	0	0	0
Rochester Theological Seminary	45,710	109,265	....	334,568	....	1,840,015	4	9,178	0	0	0	0	0
University of Rochester	74,453	262,012	329,747	1,020,100	34,534	2,499,728	92	8,110	90	90	0	0	0
St. Bonaventure's College	25,000	67,000	22,500	582,000	....	....	8	....	80	0	0	0	0
Union University	51,000	160,300	200,000	679,000	100,000	1,194,340	53	8,303	90	150	0	160	0

New York State College of Forestry (at Syracuse University)	3,500	138,000	10,000	280,000	...	...	...	...	(1)	0	0	0	0
Syracuse University	99,775	359,452	383,879	3,493,891	365,177	1,879,242	15	...	...	...	...	...	...
Rensselaer Polytechnic Institute	12,335	366,761	147,213	1,258,050	165,423	1,571,452	26	902	0	205	0	0	0
Russell Sage College of Practical Arts	808	981	60,000	270,698	...	...	...	...	130	0	0	0	0
United States Military Academy	...	...	...	...	...	...	...	...	...	...	...	...	...
NORTH CAROLINA.													
St. Genevieve's College	5,600	10,000	30,000	60,000	...	...	3	...	...	0	0	0	0
Belmont Abbey College	30,000	...	...	...	...	...	...	...	...	...	...	...	...
University of North Carolina	79,205	394,700	125,500	801,500	181,000	216,548	154	8,220	60	60	70	70	0
Biddle University (colored)	9,000	30,639	80,000	138,575	26,500	...	...	...	...	0	0	0	0
Davidson College	25,202	57,431	38,044	269,160	184,450	359,299	24	8,500	60	0	0	0	0
Trinity College	54,767	134,479	507,700	552,155	207,743	1,434,013	...	3,175	68	68	79	0	0
Elon College	10,000	40,750	25,000	260,000	127,500	86,316	24	1,000	50	0	0	0	0
Greensboro College for Women	4,000	44,870	...	147,314	70,800	102,300	...	3,593	75	0	0	0	0
Guilford College	7,000	...	40,000	183,000	102,000	189,000	...	...	60	0	0	0	0
Davenport College[2]	4,000	25,000	20,000	65,000	40,000	100,000	...	...	60	0	0	0	0
Louisburg College[2]	1,200	5,000	10,000	70,000	60,000	...	...	...	40	0	0	0	0
Meredith College	6,700	...	93,000	171,000	165,500	130,293	...	...	60	0	0	0	0
Peace Institute	2,230	20,000	80,000	60,000	50,000	...	6	...	...	...	...	...	...
Shaw University (colored)	4,600	42,750	228,740	195,290	96,568	...	...	...		0	0	0	0
Flora Macdonald College	4,350	31,000	30,000	106,419	...	10,000	6	...	60	0	0	0	0
Wake Forest College	21,000	59,525	64,000	151,000	57,700	524,323	80	...	50	0	50	75	0
Weaver College[2]	2,000	3,000	...	36,000	...	...	...	...	27	0	0	0	0
North Carolina College of Agriculture and Engineering	9,600	339,683	110,073	643,534	157,618	...	243	...	45	45	0	0	0
Atlantic Christian College	2,575	10,000	100,000	55,000	...	8,000	...	...	70	0	0	0	0
NORTH DAKOTA.													
North Dakota Agricultural College	26,995	310,987	95,000	595,000	110,000	...	24	1,350	55	55	0	0	0
Fargo College	8,400	16,900	183,000	117,000	40,000	61,467	1	1,575	75	0	0	0	0
Jamestown College	6,500	22,500	36,000	169,500	80,000	278,000	...	...	...	...	...	...	...
University of North Dakota	62,000	293,887	110,420	507,810	81,000	2,051,150	8	352	0	0	50	0	0
OHIO.													
Ohio Northern University	7,200	13,000	20,000	236,000	...	100,000	...	...	64	100	100	0	0
Municipal University of Akron	13,000	61,000	93,000	205,000	...	67,574	3	...	...	...	0	0	0
Mount Union College	12,000	179,473	110,000	193,094	55,000	369,332	...	...	70	0	0	0	0
Ohio University	47,000	289,000	541,652	950,000	230,000	153,133	...	...	0	0	0	0	0
Baldwin-Wallace College	18,844	95,400	...	468,322	60,000	582,076	...	...	47	0	75	0	0
Bluffton College	4,415	12,900	9,000	120,000	30,000	217,000	2	...	50	0	0	0	0
Cedarville College	4,500	9,000	5,000	40,000	...	103,220	...	...	30	0	0	0	0
Cincinnati College of Pharmacy	3,000	15,000	...	18,000	...	...	...	...	100	0	0	0	0
Cincinnati Veterinary College	2,000	4,000	20,000	15,000	...	...	...	...	...	...	...	...	...
Eclectic Medical College	1,200	6,600	7,500	60,000	...	50,000	...	...	0	0	0	125	0
Hebrew Union College	40,000	60,000	50,000	150,000	...	...	...	...	0	0	0	0	0
Lane Theological Seminary	23,500	15,000	...	452,808	50,000	546,703	...	4,310	0	0	0	0	0

[1] $25 to nonresidents.

[2] Junior college.

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships and scholarships, fees, 1917-18*—Continued.

Institutions.	Bound volumes in library.	Value of library scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees. Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
OHIO—continued.													
Mount St. Mary's Seminary of the West	15,000	....	$10,000	$300,000	....	....	....	....	0	0	0	0	0
St. Xavier College	30,651	$110,000	....	375,000	....	$150,000	....	....	$80	0	0	0	0
University of Cincinnati	83,000	577,200	565,000	1,487,664	....	801,408	53	$1,460	....	....	$80	$200	0
Case School of Applied Science	13,824	208,072	423,308	450,021	....	2,511,359	10	....	0	$125	0	0	0
St. Ignatius College	17,000	65,000	183,750	192,000	....	....	18	....	70	0	0	0	0
St. Mary's Theological Seminary	....	....	....	....	....	....	....	....	....	....	....	....	....
Western Reserve University	129,000	....	....	....	....	....	142	....	....	....	....	....	....
Capital University	9,000	18,000	50,000	104,000	$35,000	215,000	80	....	40	0	0	0	0
Ohio State University	184,268	1,719,157	2,013,404	3,044,782	66,490	1,035,678	....	9,770	30	30	60	150	$150
Bonebrake Theological Seminary	4,500	4,483	30,000	17,498	....	330,036	6	380	0	0	0	0	0
Central Theological Seminary	8,000	10,000	80,000	125,000	....	109,332	....	....	0	0	0	0	0
Defiance College	8,500	73,880	25,000	280,000	100,000	321,775	....	....	80	0	0	0	0
Ohio Wesleyan University	80,000	178,400	56,300	1,026,000	219,000	1,217,600	56	14,461	91	0	0	0	0
Findlay College	3,560	12,000	10,000	99,000	5,000	146,476	....	....	50	0	0	0	0
Kenyon College	27,600	92,554	60,384	490,500	265,000	629,469	22	4,810	75	0	0	0	0
Hiram College	16,800	56,768	18,785	108,609	85,000	449,924	....	....	70	0	0	0	0
Marietta College	57,000	60,000	100,000	186,000	20,000	566,983	....	....	50	0	0	0	0
Muskingum College	7,000	24,660	22,898	120,722	....	156,588	....	....	60	0	0	0	0
Miami University	50,700	219,505	71,200	782,900	180,000	118,107	....	....	30	0	0	0	0
Oxford College for Women	....	....	....	....	....	....	....	....	....	....	....	....	....
Western College for Women	20,512	86,845	26,850	367,897	191,250	287,417	11	10,255	150	0	0	0	0
Lake Erie College	14,290	80,849	62,500	246,624	114,217	212,867	18	2,315	125	0	0	0	0
Rio Grande College	5,000	10,000	2,150	57,000	....	73,000	9	125	44	0	0	0	0
Wittenberg College	22,500	36,500	112,500	281,985	106,235	509,080	....	....	75	0	0	0	0
Heidelberg University	18,000	40,000	110,000	300,000	100,000	367,600	....	....	175	0	0	0	0
St. John's University	8,500	38,000	30,000	128,000	....	15,000	15	840	60	0	50	0	0
Toledo University	4,381	35,000	200,000	137,000	....	....	....	....	0	0	40	0	0
Otterbein University	20,154	41,045	38,500	197,000	36,000	275,809	5	220	85	0	0	0	0
Wilmington College	6,000	42,200	60,500	125,000	13,500	150,000	....	....	60	0	0	0	0
College of Wooster	41,900	108,845	77,722	795,557	285,372	1,128,418	....	....	75	0	0	0	0
United Presbyterian Theological Seminary	....	10,000	10,000	15,000	5,000	206,635	....	....	0	0	0	0	0
Antioch College	12,000	38,682	10,000	184,000	50,000	115,000	....	....	42	0	0	0	0

OKLAHOMA.													
Oklahoma College for Women	4,500	35,000	10,374	200,611	100,000	....	14	500	0	0	0	0	0
Phillips University	4,820	....	35,500	160,000	25,000	205,000	20	....	60	0	0	0	0
Methodist University of Oklahoma	3,000	11,860	....	....	....	65,000	1	100	60	0	0	0	0
Kingfisher College	6,407	12,600	10,080	66,600	35,000	147,947	....	....	40	0	0	0	0
University of Oklahoma	30,000	271,116	101,889	706,869	....	3,670,000	2	550	0	0	0	0	0
Oklahoma Agricultural and Mechanical College	27,049	348,816	60,000	538,516	87,000	....	....	1,000	0	0	0	0	0
OREGON.													
Albany College	7,987	11,252	54,300	19,000	4,000	288,905	4	....	50	0	0	0	0
Oregon State Agricultural College	41,009	441,425	451,601	1,046,589	101,000	202,664	....	1,868	0	0	0	0	0
Eugene Bible University	5,925	7,798	40,000	71,900	10,000	328,000	0	0	0	0	0	0	0
University of Oregon	84,724	231,428	319,000	530,609	105,519	55,006	3	....	0	0	40	0	0
Pacific University	20,000	17,678	30,000	150,009	50,000	242,981	....	....	60	0	0	0	0
McMinnville College	4,600	10,844	55,200	37,475	....	172,026	....	3,690	57	0	0	0	0
Columbia Junior College	1,088	2,000	10,000	65,000	15,000	35,000	....	....	....	0	0	0	0
Pacific College	3,500	6,000	30,000	45,000	7,500	114,000	....	....	58	0	0	0	0
North Pacific College	700	51,325	40,000	100,000	....	....	....	....	0	0	0	0	190
Reed College	12,000	67,608	172,000	440,078	165,474	2,000,000	....	....	100	0	0	0	0
Kimball School of Theology	3,500	6,500	....	15,000	....	24,497	....	....	....	....	....	....	....
Willamette College	11,500	26,900	208,600	92,500	5,000	501,000	....	....	....	0	0	0	0
PENNSYLVANIA.													
Allentown College for Women	5,600	10,620	50,000	155,247	25,000	6,000	....	305	125	0	0	0	0
Lebanon Valley College	8,000	48,250	34,500	235,500	99,000	66,875	27	....	90	0	0	0	0
St. Vincent College	50,000	....	....	....	....	....	13	....	60	0	0	0	0
Beaver College	8,000	8,000	....	80,985	....	9,450	....	980	....	0	0	0	0
Moravian College	11,000	20,000	3,000	119,000	....	112,240	....	....	100	0	0	0	0
Moravian Seminary and College for Women	5,009	25,000	....	126,000	....	34,000	4	1,500	100	0	0	0	0
Bryn Mawr College	86,700	825,726	236,000	2,495,000	707,000	2,800,236	102	26,180	200	0	0	0	0
Dickinson College	34,000	70,000	90,000	606,000	132,000	878,456	....	3,781	125	0	0	0	0
Wilson College	14,000	85,138	44,478	248,897	125,063	75,052	2	3,015	125	0	0	0	0
Crozer Theological Seminary	29,000	....	....	200,000	....	856,155	....	....	0	0	0	0	0
Ursinus College	15,000	26,850	45,000	209,800	108,500	215,100	23	....	140	0	0	0	0
Lafayette College	42,000	309,976	205,804	890,735	....	908,929	31	....	100	150	0	0	0
Pennsylvania College	35,000	70,000	86,000	420,000	100,000	420,000	30	....	100	100	0	0	0
Theological Seminary of the General Synod of the Evangelical Lutheran Church	15,796	40,000	25,000	200,000	125,000	273,000	....	725	0	0	0	0	0
Thiel College	11,000	50,000	51,000	175,900	40,000	70,000	20	....	50	0	0	0	0
Grove City College	15,000	84,445	50,838	366,685	164,578	931,657	....	....	87	0	0	0	0
Haverford College	75,200	200,000	1,500,000	750,000	200,000	2,674,298	70	14,000	150	0	0	0	0
Franklin and Marshall College	48,000	92,500	150,090	234,000	119,875	658,965	....	....	110	0	0	0	0
Theological Seminary of the Reformed Church in the United States	18,500	40,000	60,000	275,000	100,000	384,277	....	....	0	0	0	0	0
Bucknell University	35,000	220,000	30,000	523,000	200,900	536,245	61	....	150	175	0	0	0
Lincoln University (colored)	15,023	30,000	30,800	285,933	73,000	683,982	....	....	25	0	0	0	0

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships and scholarships, fees, 1917–18*—Continued.

Institutions.	Bound volumes in library.	Value of library scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees.				
									Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
TENNESSEE—continued.													
Tennessee College	3,250	$20,000	$60,000	$80,000	....	$10,000	66	$6,860	$87	0	0	0	0
Fisk University (colored)	12,000	86,602	74,951	355,197	$151,600	253,028	....	1,512	30	0	0	0	0
George Peabody College for Teachers	40,000	69,408	485,622	882,744	....	2,063,000	78	750	0	0	0	0	0
Meharry Medical College (colored)	1,000	20,000	....	160,000	10,000	54,314	....	....	0	0	0	$60	$60
Vanderbilt University	67,000	327,920	384,898	1,411,382	279,856	3,457,212	5	500	105	$105	$150	150	160
Martin College [1]	1,600	6,000	16,000	80,000	....	30,000	0	0	75	0	0	0	0
Ruskin-Cave College	3,000	20,000	17,000	63,250	50,500	....	0	0	50	0	0	0	0
University of the South	37,841	175,000	95,682	501,976	152,000	464,867	89	6,529	45	0	0	0	0
Washington College	3,000	10,000	80,000	25,000	15,000	65,000	17	....	30	0	0	0	0
TEXAS.													
Austin Presbyterian Theological Seminary	4,000	10,000	10,000	100,000	35,000	40,000	11	....	0	0	0	0	0
University of Texas	158,051	800,000	150,000	2,060,000	262,600	2,000,000	....	1,760	0	0	0	0	0
Baylor Female College	6,602	60,565	40,000	270,000	170,000	....	....	10,000	....	0	0	0	0
Howard Payne College	6,000	30,000	63,000	125,800	45,000	26,000	....	....	80	0	0	0	0
Clarendon College [1]	23,000	18,000	25,000	150,000	65,000	....	....	....	....	0	0	0	0
Agricultural and Mechanical College of Texas	20,000	535,121	149,065	1,702,894	386,000	209,000	10	13,173	0	0	0	0	0
Southern Methodist University	10,000	52,517	667,481	518,517	206,801	249,092	12	....	....	0	0	0	0
College of Industrial Arts	12,000	167,460	93,500	740,023	365,000	....	5	....	35	0	0	0	0
Southwestern Baptist Theological Seminary	6,600	6,000	40,000	304,000	300,000	480,000	....	....	0	0	0	0	0
Texas Christian University	16,487	29,714	110,118	276,901	173,000	....	5	4,100	85	0	95	0	0
Texas Woman's College	6,000	50,892	125,000	191,150	116,150	....	....	....	100	0	0	0	0
Southwestern University	23,000	130,635	57,500	434,536	205,500	279,752	....	569	105	0	0	0	0
Rice Institute	14,000	455,000	234,000	1,488,000	536,000	10,000,000	6	5,250	0	0	0	0	0
Westminster College [1]	3,800	7,000	10,000	90,000	14,000	8,000	....	....	68	0	0	0	0
Texas Military College	2,100	10,000	80,000	70,000	35,000	....	....	....	....	0	0	0	0
Thorp Springs Christian College [1]	5,000	....	....	....	....	....	....	....	....	....	....	....	....
Baylor University	30,474	89,805	100,000	496,760	171,977	554,947	17	....	73	0	0	100	0

UTAH.													
Utah Agricultural College	31,773	188,924	23,700	648,700	....	....	....	....	....	....	0	0	0
University of Utah	53,065	100,000	50,000	750,000	....	20,000	40	1,000	....	....	50	75	0
VERMONT.													
University of Vermont and State Agricultural College	96,960	286,222	75,000	1,180,000	....	1,063,525	177	....	125	125	0	140	0
Middlebury College	45,000	134,995	23,995	604,760	243,819	1,032,668	105	8,390	100	0	100	0	0
Norwich University	17,600	62,500	9,884	129,450	75,000	....	205	6,880	200	200	0	0	0
St. Michael's College	5,600	10,000	10,000	40,000	....	....	2	....	50	0	0	0	0
VIRGINIA.													
Randolph-Macon College	16,500	22,029	20,000	193,490	83,800	444,901	25	2,125	75	0	0	0	0
Virginia Polytechnic Institute	34,927	178,000	80,000	613,000	80,000	....	....	....	60	60	0	0	0
Blackstone College for Girls[1]	2,500	....	....	160,000	....	....	35	....	....	0	0	0	0
Bridgewater College	9,000	30,000	15,000	86,000	36,000	80,000	3	400	75	0	0	0	0
Sullins College[1]	2,500	22,000	25,000	100,000	75,000	....	....	....	75	0	0	0	0
Virginia Intermont College[1]	1,200	....	....	100,000	....	....	....	....	60	0	0	0	0
University of Virginia	100,000	322,933	600,000	1,504,189	105,893	2,277,775	56	10,367	135	185	140	140	0
Daleville College[1]	2,000	9,750	2,000	56,500	28,000	69,807	....	....	54	0	0	0	0
Averette College[1]	1,400	....	28,000	65,000	....	....	3	....	....	0	0	0	0
Emory and Henry College	12,000	25,000	30,000	100,000	30,000	75,000	....	....	114	0	0	0	0
Hampden-Sidney College	22,000	26,000	20,000	160,000	60,000	191,405	25	....	100	0	0	0	0
Hollins College	7,500	44,682	50,000	248,168	....	....	....	....	100	0	0	0	0
Virginia Military Institute	17,000	27,750	37,500	589,886	....	84,200	65	....	....	....	0	0	0
Washington and Lee University	50,000	126,745	59,979	476,023	53,187	943,494	21	2,058	105	105	125	0	0
Randolph-Macon Woman's College	16,500	154,881	....	440,696	120,000	262,000	3	....	50	0	0	0	0
Virginia Christian College	3,500	30,000	75,000	185,000	110,000	....	25	500	50	0	0	0	0
Virginia Theological Seminary and College	3,800	....	60,000	85,000	75,000	....	....	....	24	0	0	0	0
Eastern College	4,000	7,500	20,000	100,000	....	20,000	5	....	....	....	....	....	....
Marion College[1]	2,800	5,000	15,000	....	75,000	....	3	....	50	0	0	0	0
Medical College of Virginia	4,800	81,341	86,040	367,213	....	....	....	14	0	0	0	150	150
Richmond College	30,000	76,000	250,000	1,000,000	212,125	1,050,000	100	....	100	....	....	....	....
Union Theological Seminary	29,770	90,000	118,000	279,818	....	749,016	73	8,047	0	0	0	0	0
Virginia Union University (colored)	13,000	15,000	50,000	250,000	100,000	103,000	20	....	16	0	0	0	0
Elizabeth College	3,000	9,000	15,000	59,000	53,000	....	8	....	90	0	0	0	0
Roanoke College	25,000	38,000	36,000	162,000	60,000	155,239	29	2,400	74	0	0	0	0
Sweet Briar College	6,000	69,820	60,000	488,510	172,752	120,000	10	....	150	0	0	0	0
Theological Seminary of the Protestant Episcopal Church in Virginia	32,000	40,000	50,000	100,000	70,000	780,000	20	....	0	0	0	0	0
College of William and Mary	17,500	75,000	50,000	260,000	75,000	151,327	6	240	([2])	0	0	0	0
WASHINGTON.													
State College of Washington	64,000	327,820	147,124	1,278,529	83,300	906,668	....	4,800	0	0	0	0	0
University of Washington	108,117	664,561	1,001,250	1,195,990	33,828	5,000,000	15	15,077	20	20	20	0	0
Gonzaga University	14,000	62,000	....	550,000	....	....	....	....	50	0	75	0	0
Whitman College	27,585	83,924	225,000	166,300	21,500	665,523	27	6,334	100	0	0	0	0

[1] Junior college.

[2] $40 to nonresidents.

TABLE 28.—*Universities, colleges, and professional schools—Property, fellowships, and scholarships, fees, 1917–18*—Continued.

Institutions.	Bound volumes in library.	Value of library scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings (including dormitories).	Value of dormitories (included in column 5).	Endowment funds.	Fellowships and scholarships.	Amount given in fellowships and scholarships.	Tuition fees.				
									Arts and sciences.	Engineering.	Law.	Medicine.	Dentistry.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
WEST VIRGINIA.													
Morris Harvey College	2,800	$20,000	$10,000	$83,000	$41,000					0	0	0	0
West Virginia Wesleyan College	10,000	38,735	65,785	182,643	25,892	$178,436			$50	$50	0	0	0
Davis and Elkins College	2,500	8,000	25,000	70,000	60,000	101,000	5		50	0	0	0	0
West Virginia University	64,826	300,000	300,000	800,000		116,000			(1)	(1)	(2)	(2)	0
WISCONSIN.													
Lawrence College	37,112	146,383	105,957	590,900	380,286	1,168,442		$935	70	0	0	0	0
Beloit College	60,000	150,463	89,000	441,678	101,500	2,095,319	10	6,659	100	0	0	0	0
University of Wisconsin	253,000	1,712,496	2,137,311	4,769,488	362,000	704,399	102	19,050	(1)	(1)	(1)	(1)	0
Milton College	11,000	20,000	7,500	65,000	7,000	200,000	7	1,386	50	0	0	0	0
Marquette University	13,000		306,300	417,800		1,500,000	9		60	125	$100	$200	$170
Milwaukee-Downer College	13,104	66,811	236,952	447,457	202,553	444,548	8	620	125	0	0	0	0
Mission House	18,000	50,000	7,000	169,000	110,000	29,447				0	0	0	0
Ripon College	25,047	53,674		303,472	91,640	338,524		868	75	0	0	0	0
St. Clara College and Academy	10,000	194,031	51,000	250,000			1		100	0	0	0	0
Carroll College	9,000	21,000	48,900	205,000	40,000	348,560			70	0	0	0	0
Evangelical Lutheran Theological Seminary	5,000	6,000		60,000	50.000				0	0	0	0	0
WYOMING.													
University of Wyoming	41,000	304,000	100,000	487,000	80,000	239,339	48	720	0	0	0	0	0

[1] $50 to nonresidents.

[2] $25 to residents; $50 to nonresidents.

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917-18.*

Institutions.	From student fees.			From productive funds.	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
ALABAMA.													
Alabama Polytechnic Institute	$13,242	$1,433		$21,440		$102,445	$125,761				$18,795	$283,116	$283,116
Birmingham-Southern College	10,632	3,000	$22,950	4,000					$60,000		15,000	115,582	55,582
Howard College	11,300	1,800	9,000	7,000					25,000	$10,000		64,100	39,100
Judson College	40,000		51,618	2,875								9,493	94,493
Marion College	80,000		100,000									180,000	180,000
Alabama Girls' Technical Institute				18,473		36,000						54,473	54,473
Woman's College of Alabama	35,285		40,486	3,500				$5,600			1,722	86,593	86,593
St. Bernard College													
Spring Hill College	20,373	2,400	38,846					12,500			9,745	83,864	83,864
Talladega College (colored)	8,225	5,600	16,800	10,088						21,347	590	62,650	62,650
University of Alabama	43,346	9,679	7,623	65,453		60,000				4,100	4,532	194,733	194,733
ARIZONA.													
University of Arizona	6,782	3,093	41,827	18,448	$100,000	263,073	94,574				28,195	555,992	555,992
ARKANSAS.													
Henderson-Brown College	20,229		12,288	1,960					200			34,677	34,477
Ouachita College													
Arkansas Cumberland College	2,500	250	2,500	1,000						5,000		11,250	11,250
Central Baptist College	16,375	1,511	15,819									33,705	33,705
Hendrix College	13,666	1,332	11,745	13,050								39,793	39,793
Crescent College[1]	15,500		25,500					1,200		3,000		45,200	45,200
University of Arkansas	15,709	1,300		6,183		219,538	120,840				6,204	369,774	369,774
Arkansas Law School													
St. John's Diocesan Seminary													

[1] Junior college.

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917–18*—Continued.

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
CALIFORNIA.													
Bakersfield Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
University of California	$280,215	....	....	$226,316	$246,361	$1,979,058	$119,433	$43,000	$122,176	$75,285	$641,142	$3,732,986	$3,610,810
Berkeley Baptist Divinity School	....	....	....	....	....	....	....	9,000	....	4,200	....	13,200	13,200
Pacific Unitarian School for the Ministry	54	$97	....	12,080	....	....	....	....	129,519	672	395	142,817	13,298
Pomona College	60,394	8,717	....	44,056	....	....	....	7,000	18,809	1,766	4,625	145,367	126,558
Fresno Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
Fullerton Junior College	....	....	....	....	10,000	12,000	....	....	....	....	....	22,000	22,000
Occidental College	28,637	2,065	....	18,449	....	....	....	....	....	3,091	....	52,242	52,242
University of Southern California	115,088	....	$4,559	16,610	....	....	....	....	1,150,000	8,810	6,124	1,301,191	151,191
St. Patrick's Seminary	12,000	....	....	....	....	....	....	28,000	....	....	....	40,000	40,000
Mills College	40,118	24,960	73,886	15,103	....	....	....	....	....	6,173	8,442	168,682	168,682
St. Mary's College	60,626	5,500	45,362	....	....	....	....	....	....	....	....	111,488	111,488
Throop College of Technology	23,914	753	489	20,431	....	....	....	7,310	....	53,858	161	106,916	106,916
University of Redlands	18,976	3,107	8,880	2,686	....	....	....	....	....	15,249	5,212	54,110	54,110
Sacramento Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
San Francisco Theological Seminary	....	....	....	25,793	....	....	....	....	....	3,389	....	29,182	29,182
College of the Pacific	36,458	3,987	23,485	11,006	....	....	....	....	1,500	10,129	1,948	88,513	87,013
San Luis Obispo Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
Santa Ana Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
University of Santa Clara	71,683	6,611	....	....	....	....	....	....	....	....	14,778	93,072	93,072
Leland Stanford Junior University	104,041	....	50,000	900,000	....	....	....	....	....	....	355,407	1,409,448	1,409,448
Whittier College	12,000	700	5,500	9,000	....	....	....	....	....	....	....	27,200	27,200
COLORADO.													
University of Colorado	54,000	200	....	4,000	80,000	310,000	....	....	....	....	40,000	488,200	488,200
Colorado College	37,882	13,329	42,965	75,066	....	....	....	....	371,025	2,544	11,705	554,476	183,451
College of the Sacred Heart	9,887	770	30,137	....	....	....	....	....	....	....	9,961	50,755	50,755

Iliff School of Theology	236	115	.....	15,590	.....	.....	.....	.....	.....	39	.....	15,980	15,980
Colorado Agricultural College	94,433	.....	.....	22,237	.....	179,459	102,780	.....	.....	.....	44,724	378,688	378,688
State School of Mines	11,193	.....	.....	.....	.....	100,552	.....	.....	.....	.....	5,001	116,746	116,746
Colorado State Teachers College	47,847	.....	.....	.....	72,000	161,800	.....	.....	.....	.....	1,924	283,571	283,571
Colorado Woman's College	9,758	4,467	7,270	.....	.....	.....	.....	9,288	.....	.....	.....	30,783	30,783
University of Denver	48,758	.....	.....	13,524	.....	.....	.....	.....	67,100	1,009	1,147	131,547	64,458
CONNECTICUT.													
Trinity College	12,886	1,691	.....	76,881	.....	.....	.....	.....	40,447	8,078	.....	139,983	99,536
Hartford Seminary	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Berkeley Divinity School	.....	.....	3,295	18,276	.....	.....	.....	.....	3,411	1,824	.....	26,806	23,395
Wesleyan University	44,043	12,061	7,659	182,563	.....	.....	.....	18,800	19,513	16,271	2,176	303,076	283,568
Yale University	357,482	130,072	.....	1,119,646	.....	.....	.....	1,125,999	1,279,649	456,414	52,767	4,522,029	3,242,380
Connecticut College for Women	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Connecticut Agricultural College	17,700	.....	32,533	6,810	92,057	95,000	78,726	.....	20,400	.....	140,584	483,810	463,410
DELAWARE.													
Delaware College	15,402	.....	32,811	26,205	125,000	63,332	94,133	30,000	.....	.....	37,066	423,949	423,949
DISTRICT OF COLUMBIA.													
American University	305	.....	.....	28,646	.....	.....	.....	3,025	1,523	682	.....	34,781	33,258
Catholic Sisters College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Catholic University of America	42,908	24,956	59,425	75,391	.....	.....	.....	24,194	178,074	97,918	65,284	568,150	390,076
Gallaudet College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgetown University	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
George Washington University	168,248	.....	.....	6,749	.....	.....	.....	.....	9,849	831	70,835	256,512	246,668
Howard University (colored)	63,374	10,486	24,712	13,714	.....	.....	101,000	.....	1,452	3,115	6,835	224,688	223,236
National University Law School	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trinity College	41,710	20,000	81,147	.....	.....	.....	.....	.....	.....	.....	.....	142,857	142,857
Washington College of Law	8,300	.....	.....	257	.....	.....	.....	.....	250	.....	.....	8,807	8,557
FLORIDA.													
John B. Stetson University	19,880	5,390	18,769	47,233	.....	.....	.....	.....	.....	.....	.....	91,272	91,272
University of Florida	3,000	.....	33,240	13,604	14,594	103,363	82,298	.....	.....	64,047	1,000	315,146	315,146
Florida State College for Women	13,407	.....	60,442	2,064	100,000	115,036	.....	.....	.....	.....	.....	290,949	290,949
Rollins College	7,201	3,797	15,769	8,350	.....	.....	.....	.....	.....	22,500	1,715	59,332	59,332
GEORGIA.													
University of Georgia	12,394	5,150	.....	25,579	.....	244,629	110,462	.....	360	2,285	59,938	460,797	460,437
Atlanta University (colored)	11,721	3,701	11,104	9,844	.....	.....	.....	.....	3,858	34,938	9,578	84,744	80,886
Gammon Theological Seminary (colored)	1,051	.....	.....	27,648	.....	.....	.....	.....	.....	.....	.....	28,699	28,699
Georgia School of Technology	43,756	.....	.....	1,200	30,000	114,291	.....	.....	5,991	.....	8,365	203,603	197,612
Morehouse College (colored)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris Brown University (colored)	3,793	.....	12,115	.....	.....	.....	.....	.....	.....	38,000	.....	53,908	53,908
Cox College	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917–18*—Continued.

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
GEORGIA—continued.													
North Georgia Agricultural College	$1,800		$17,500			$26,500					$2,666	$48,466	$48,466
Agnes Scott College	45,590		71,752	$5,483								122,825	122,825
Brenau College	64,279	$20,317	72,138					$7,500	$2,000		9,125	175,389	173,389
Lagrange Female College	18,052	1,011	17,711	922						$1,372	122	39,190	39,190
Southern Female College	5,000		5,000								1,500	11,500	11,500
Mercer University	10,029			26,122					35,500	2,750	904	75,305	39,805
Wesleyan Female College	59,065		62,560	6,596					7,611	3,080		138,912	131,301
Oglethorpe University	5,877	3,553	7,187	40,000								56,617	56,617
Emory University	36,300	9,875	21,600	103,350				645,500	515,750		31,280	1,363,655	847,905
Shorter College	31,179		60,250	2,500							1,200	95,129	95,129
Clark University (colored)	3,635	1,042	3,651	2,687				300	5,000	10,788	923	28,026	23,026
HAWAII.													
College of Hawaii	112				$11,363	22,593	$50,000				5,027	89,095	89,095
IDAHO.													
College of Idaho	3,874	1,066		5,884					13,662	13,999		38,485	21,823
University of Idaho	2,500	1,800	4,365	101,276	56,000	119,860	98,290				9,649	393,740	393,740
Idaho Technical Institute[1]	1,646	1,694	8,920	10,000	40,000	164,172	125				932	227,489	227,489
ILLINOIS.													
Hedding College	13,402	2,967		13,332						1,605		31,306	31,306
Aurora College	3,158	3,132	5,642	2,843				494	31,856	3,848	261	51,234	19,378
Illinois Wesleyan University	26,469			26,799						1,658	2,044	56,970	56,970
St. Viator College													
Blackburn College[1]	9,178			4,808						19,836	4,837	38,659	38,659
Carthage College	8,250	2,120	11,156	14,941				41,245	40	6,495		84,247	84,207
Armour Institute of Technology	81,227			142,403								228,630	228,630
Bethany Bible School	3,274	6,459	13,758	1,531				20,226	4,235	6,031		55,514	51,279

Central States College of Pharmacy	6,000	....	....	4,450	....	....	....	....	....	....	....	10,450	10,450
Chicago-Kent Law School	....	....	....	....	....	....	....	....	....	....	....	....	....
Chicago Theological Seminary	1,785	....	....	31,327	....	....	....	....	360	4,498	702	38,672	38,312
Chicago Veterinary College	27,000	....	....	....	....	....	....	....	....	....	....	27,000	27,000
Evangelical Lutheran Theological Seminary	....	....	....	20,000	....	....	....	7,500	65,000	19,000	....	111,500	46,500
Hahnemann Medical College	9,434	....	....	13,490	....	....	....	....	....	10,620	5,493	39,037	39,037
Hamilton College of Law	39,504	....	....	....	....	....	....	....	....	....	....	39,504	39,504
Lewis Institute	77,949	....	....	72,989	....	....	....	....	....	....	....	150,938	150,938
Loyola University	83,950	....	....	525	....	....	....	....	....	....	39,054	123,529	123,529
McCormick Theological Seminary	....	....	....	83,849	....	....	....	....	14,800	....	11.181	109,830	95,030
University of Chicago	785,430	65,868	202,550	1,460,906	....	....	....	587,362	1,478,990	14,169	193,877	4,789,152	3,310,162
Western Theological Seminary	....	....	300	.17,366	....	....	....	....	35,000	3,500	....	56,166	21,166
James Millikin University	44,666	....	15,248	43,963	....	....	....	....	40,000	....	....	143,877	103,877
Eureka College	19,479	2,483	16,578	8,866	....	....	....	22,432	4,300	13,145	....	87,283	82,983
Garrett Biblical Institute	3,779	573	....	137,469	....	....	....	5,718	1,426	....	....	148,965	147,539
Northwestern University	673,608	....	79,989	235,068	....	....	....	....	....	14,237	87,842	1,090,744	1,090,744
Norwegian-Danish Theological Seminary	....	300	....	....	....	....	....	....	....	2,700	....	3,000	3,000
Swedish Theological Seminary	....	....	....	1,942	....	....	....	....	4,925	1,772	....	8,639	3,714
Knox College	31,991	12,229	24,500	38,294	....	....	....	....	124,253	....	1,966	233,233	108,980
Lombard College	13,079	....	8,693	4,627	....	....	....	....	13,700	3,266	1,061	44,426	30,726
Monticello Seminary [1]	77,502	....	24,980	6,976	....	....	....	....	....	....	....	109,458	109,458
Greenville College	14,231	....	7,774	377	....	....	....	....	300	379	1,819	24,880	24,580
Illinois College	26,859	....	7,850	28,148	....	....	....	....	2,753	858	254	66,722	63,969
Illinois Woman's College	35,405	5,431	....	11,094	....	....	....	....	....	....	9,965	61,895	61,895
Joilet Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
Lake Forest College	....	....	....	....	....	....	....	....	....	....	....	....	....
McKendree College	7,092	1,736	8,074	8,370	....	....	....	15,000	....	1,042	....	41,314	41,314
Lincoln College	990	....	....	5,600	....	....	....	....	....	....	2,590	9,180	9,180
Monmouth College	20,910	5,230	10,923	18,431	....	....	....	5,344	22,128	11,336	312	94,614	72,486
Frances Shimer College [1]	51,505	....	....	2,418	....	....	....	121	....	....	6,536	60,580	60,580
Evangelical Theological Seminary	....	....	....	3,103	....	....	....	....	....	....	1,721	4,824	4,824
Northwestern College	25,407	....	....	11,164	....	....	....	537	15,468	7,484	....	60,060	44,592
Bradley Polytechnic Institute	17,000	....	....	68,783	....	....	....	....	....	....	....	85,783	85,783
Rockford College	33,029	....	54,291	12,771	....	....	....	....	1,178	112	1,649	103,030	101,852
Augustana College	24,931	3,101	24,392	21,762	....	....	....	....	4,320	26,617	41,218	146,341	142,021
Concordia Theological Seminary	....	....	....	....	....	....	....	....	....	....	....	....	....
Shurtleff College	6,797	1,762	3,145	9,070	....	....	....	....	....	3,199	1,883	25,856	25,856
University of Illinois	239,591	....	....	32,451	250,000	2,083,263	160,086	36,450	....	....	273,568	3,075,409	3,075,409
Wheaton College	12,293	3,791	9,512	12,403	....	....	....	1,250	500	7,910	1,194	48,853	48,353
INDIANA.													
Indiana University	101,545	....	....	45,511	....	586,671	....	....	....	....	20,855	754,582	754,582
Wabash College	10,909	....	....	38,760	....	....	....	12,614	41,108	....	....	103,386	62,283
Earlham College	20,277	....	45,717	27,200	....	....	....	....	....	....	4,579	97,773	97,773

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[1] Junior college.

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917-18*—Continued.

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
INDIANA—continued.													
Franklin College	$20,262	$4,135	$7,346	$22,820				$2,248	$26,139	$2,419	$1,479	$86,848	$60,709
Goshen College	14,612	4,205	13,173	1,170						5,791	394	39,345	39,345
De Pauw University	59,735	16,206	36,496	66,927						12,950	2,889	195,203	195,203
Hanover College	6,907			11,875					35,447	1,446		55,675	20,228
Butler College	27,183		8,284	19,610					2,575	1,300	11,402	70,354	67,779
Indiana Central University	5,000			6,000					250,000	20,000		281,000	31,000
Indiana College of Pharmacy													
Indiana Dental College	44,540										14,852	59,392	59,392
Indiana Veterinary College	16,445											16,445	16,445
Purdue University	63,461	2,209		29,499	$186,008	$477,050	$140,483				307,982	1,206,692	1,206,692
St. Mary's College and Academy	118,650										4,732	123,382	123,382
University of Notre Dame													
St. Meinrad Seminary	5,400		27,200								6,000	38,600	38,600
Rose Polytechnic Institute	11,350			32,500								43,850	43,850
Vincennes University	2,500			12,000							1,000	15,500	15,500
IOWA.													
Iowa State College of Agriculture and Mechanic Arts[1]	90,358	15,595	46,957	35,417	267,500	889,000	124,432	2,000	1,000		232,650	1,704,900	1,703,909
Iowa State Teachers College	52,765	25,799			37,000	389,500					13,831	518,895	518,895
Coe College	41,607	5,091	16,054	40,664								103,416	103,416
Wartburg College	6,467			274						16,960	210	23,911	23,911
Luther College	4,094	4,070	11,179	16,659				669		11,157	215	48,043	48,043
Des Moines College	64,401	22,500	55,200	10,000				9,000	18,518	9,518	37,037	226,174	207,656
Drake University	134,525			49,045						10,909	9,534	204,013	204,013
Dubuque College, Fourteenth Street	27,896	13,836	70,658	12,000					1,000,000			1,124,390	124,390
Dubuque College and Seminary	32,084			14,240				5,000		46,050	44,109	141,483	141,483
Mount St. Joseph College	20,150	10,200	27,530	15,000								72,880	72,880
Wartburg Theological Seminary			2,745	1,675					123	32,249		36,792	36,669
Parsons College	12,327	1,584	5,164	11,455				972	7,076	1,949		40,527	33,451

Grinnell College	78,942		144,355	70,515					11,250	54,547		359,609	348,359
Simpson College	25,000			90,000					30,000	8,800	8,800	93,600	62,600
State University of Iowa	118,818	17,698	81,860	22,904	275,000	924,916					381,402	1,772,147	1,772,147
Ellsworth College	12,890	1,625	9,250	9,000							696	32,400	32,400
Graceland College[2]	11,232	3,189	8,907							11,400	3,325	38,053	38,053
Iowa Wesleyan College	82,894	2,560	7,000									41,894	41,894
Cornell College	51,845	503	4,976	44,987				1,997	63,066	20,188	1,061	187,198	124,198
Cedar Valley Junior College	5,000		3,000	10,000							2,000	20,000	20,000
Penn College	15,984	3,131	6,263	10,481							2,389	38,248	38,248
Central University of Iowa	4,241	695		3,456					23,241	12,448		44,081	20,840
Morningside College	22,534			22,716						5,444	275	50,909	50,969
KANSAS.													
Midland College	9,000	1,500	2,500	5,000				15,000	5,000	13,455	250	51,705	46,705
St. Benedict's College													
Baker University	26,054	4,291		25,692					140,367	14,972	1,091	212,467	72,100
College of Emporia	17,635		13,039	4,897					4,394		83,839	123,304	118,910
Highland College	1,800			2,400						250	500	4,950	4,950
Campbell Junior College	100					3,817						3,917	3,917
Kansas City Baptist Theological Seminary			877	2,300						19,000		22,177	22,177
Kansas City University	2,062	98	1,780								7,446	11,381	11,381
University of Kansas	89,024			7,541	112,500	649,500					69,295	930,860	930,860
Bethany College	11,159	423	4,590	2,368						5,491	2,754	26,785	26,785
McPherson College	17,044	2,500	14,464	11,070						1,314	5,090	51,488	51,488
Kansas State Agricultural College	58,122		39,136	24,877	80,000	618,316	128,814				301,864	1,251,129	1,251,129
Ottawa University	13,697			15,676				9,823	30,696	9,978	1,270	81,140	50,444
St. Mary's College	8,905	32,610	82,730							8,532	98,801	231,638	231,638
Kansas Wesleyan University	7,457	711	5,048	9,999				3,000	15,000	645		41,853	26,853
Cooper College	6,786	835	2,646	5,189				14,602	400	3,394	783	87,656	[illegible]
Washburn College	42,666	3,470	8,303	22,919				572	29,500	107	1,158	108,055	78,555
Fairmount College													
Friends University	8,227			11,831					21,915		2,550	44,523	22,608
Southwestern College	18,032			11,544						21,908	5,376	56,860	56,860
KENTUCKY.													
Berea College	26,867	19,371	63,966	54,944				28,120	34,947	40,020	328,268	588,503	553,556
Ogden College	1,900		10,000									11,900	11,900
Centre College	12,000	1,500		20,000								33,500	33,500
Kentucky College for Women	17,856		34,714							1,000	500	53,570	53,570
Georgetown College	19,780	2,445	35,835	15,472					1,353	10,725	492	80,102	84,749
Transylvania College	6,900	3,120		22,562				7,934	4,490	1,648	4,347	51,001	46,511
University of Kentucky	16,559	1,148	22,256	10,044		263,718	139,030			8,000	204,266	660,651	650,651
Louisville College of Pharmacy	4,768										940	5,708	5,708
Presbyterian Theological Seminary of Kentucky			3,700	22,000					2,500	600		28,800	26,300
Southern Baptist Theological Seminary	450	1,250		52,000					50,000	7,800		111,500	61,500

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[1] Statistics of 1917.

[2] Junior college.

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917–18*—Continued.

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
KENTUCKY—continued.													
University of Louisville	$53,827					$40,950						$94,777	$94,777
Bethel College	9,619	$2,433	$8,900	$3,800				$25,000	$500	$3,000		53,252	52,752
St. Mary's College	500	200	30,173								$6,871	37,744	37,744
Kentucky Wesleyan College	5,800			5,500							9,000	20,300	20,300
LOUISIANA.													
Louisiana State University and Agricultural and Mechanical College	13,491			14,555		164,000	$106,461				85,416	383,923	383,923
Mansfield Female College[1]													
H. Sophie Newcomb Memorial College													
Loyola University	15,805											15,805	15,805
Tulane University of Louisiana	157,471		40,273	221,309				9,445	20,200	16,776	37,442	502,916	482,716
Louisiana College	12,660	3,967	15,473					27,837		8,985		68,922	68,922
MAINE.													
Bowdoin College	36,717	7,655		120,061					117,794	644		282,871	165,077
Bates College	27,297	9,493		44,354				91,000	153,180	20,152		345,476	192,296
University of Maine	57,252		10,027	9,915		149,202	101,702				57,058	385,156	385,156
Colby College													
MARYLAND.													
St. John's College	9,529		2,364	431		35,000						47,324	47,324
United States Naval Academy							2,622,949					2,622,949	2,622,949
Baltimore College of Dental Surgery	12,390											12,390	12,390
Goucher College	114,765	41,600	99,840	38,755				124,473	98,650		7,909	525,992	427,342
Johns Hopkins University													

Morgan College (colored)	3,901	1,611	7,920	2,238	....	5,000	....	500	....	8,042	11,260	40,481	40,481
Mount St. Joseph's College	34,028	....	....	....	....	....	....	....	....	....	....	34,028	34,028
St. Mary's Seminary	20,000	....	50,000	4,000	....	....	....	....	....	....	....	74,000	74,000
University of Maryland, Dental Department	....	....	....	....	....	....	....	....	....	....	....	....	....
Washington College	2,914	246	....	....	$10,000	28,275	....	....	....	....	579	42,014	42,014
Maryland State College of Agriculture	7,000	3,508	19,408	6,543	174,000	101,658	110,658	....	....	....	16,264	439,039	439,039
Rock Hill College	10,230	720	21,417	....	....	....	....	....	....	....	479	32,846	32,846
Mount St. Mary's College	21,750	43,500	43,500	....	....	....	....	....	....	6,320	....	115,070	115,070
Hood College	33,518	7,300	31,789	1,862	....	....	....	7,016	1,000	278	1,777	84,540	83,540
Maryland College for Women	....	....	....	....	....	....	....	....	....	....	....	....	....
Blue Ridge College	5,432	1,856	7,732	5,000	....	2,500	....	....	79,875	478	589	103,462	23,587
Western Maryland College	18,538	....	28,132	....	....	....	....	....	....	....	1,884	48,554	48,554
Westminster Theological Seminary	6,577	2,364	1,945	1,126	....	....	....	5,498	2,095	....	....	19,605	17,510
MASSACHUSETTS.													
Amherst College	52,158	6,989	....	127,512	....	....	....	250,000	668,100	23,957	1,204	1,129,920	461,820
Massachusetts Agricultural College	10,363	5,539	47,140	10,613	66,483	364,500	79,927	....	....	....	119,229	703,794	703,794
Boston University	231,234	....	....	55,721	....	....	....	8,654	125	25,430	....	321,164	321,039
Massachusetts College of Pharmacy	17,174	....	....	12,357	....	....	....	183,777	....	....	....	213,308	213,308
Portia School of Law	5,400	....	....	....	....	....	....	....	....	....	....	5,400	5,400
St. John's Seminary	18,000	....	18,000	....	....	....	....	....	....	....	....	36,000	36,000
Simmons College	134,510	....	90,205	90,819	....	....	....	....	6,188	14,028	3,354	339,104	332,916
Suffolk Law School	22,720	....	....	....	....	....	....	....	....	....	....	22,720	22,720
Andover Theological Seminary	2,260	432	....	34,903	....	....	....	....	....	....	....	37,595	37,595
Episcopal Theological School	....	....	....	....	....	....	....	....	....	....	....	....	....
Harvard University	618,489	122,952	217,077	1,664,153	....	....	....	....	746,547	432,768	252,224	4,054,210	3,307,663
Massachusetts Institute of Technology	409,000	28,000	....	312,000	....	100,000	22,000	123,000	400,000	27,000	460,000	1,881,000	1,481,000
New Church Theological School	....	....	....	10,732	....	....	....	....	....	150	870	11,752	11,752
Radcliffe College	98,097	22,043	50,846	80,000	....	....	....	....	78,500	....	1,490	330,976	252,476
Boston College	27,686	....	....	1,049	....	....	....	....	9,500	50,116	6,040	94,391	84,891
Lowell Textile School	17,930	....	....	....	15,825	60,000	....	....	....	....	8,874	102,629	102,629
Newton Theological Institution	....	1,200	....	36,000	....	....	....	....	70,000	....	....	107,200	37,200
Smith College	318,725	....	18,397	155,997	....	....	....	....	....	2,332	13,087	508,538	508,538
Wheaton College	27,927	19,170	36,237	44,838	....	....	....	500	220	2,678	3,450	135,020	134,800
Mount Holyoke College	143,529	....	223,450	67,957	....	....	....	2,890	9,795	6,729	64,586	518,936	509,141
Tufts College	288,031	11,482	19,186	78,588	....	....	....	....	70,978	1,712	29,415	499,392	428,414
Wellesley College	374,353	....	456,036	175,576	....	....	....	323	22,098	840	12.337	1,041,563	1,019,465
Williams College	79,766	....	9,841	125,720	....	....	....	....	440,304	51,053	34,637	741,321	301,017
Clark College	6,070	....	10,560	70,500	....	....	....	....	....	....	....	87,130	87,130
Clark University	710	....	....	104,090	....	....	....	....	....	....	....	104,800	104,800
College of the Holy Cross	50,410	19,650	98,303	4,330	....	....	....	34,140	1,000	9,113	29,645	246,591	245,591
Worcester Polytechnic Institute	64,473	....	....	34,727	....	50,000	....	....	....	....	37,487	186,687	186,687

[1] Junior college.

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917–18*—Continued.

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
MICHIGAN.													
Adrian College	$7,247	$1,181	$4,042	$1,390	....	....	....	$1,500	$50,000	$8,000	....	$73,360	$23,360
Albion College	26,741	....	21,000	....	....	....	....	....	....	....	$14,138	61,879	61,879
Alma College	10,703	5,285	13,942	27,455	....	....	....	....	1,130	3,878	9	62,402	61,272
University of Michigan	427,870	....	....	77,666	$130,000	$1,164,000	....	98,608	163,660	30,450	555,579	2,647,833	2,484,173
Detroit College of Law	15,284	....	....	....	....	....	....	....	....	....	....	15,284	15,284
Detroit College of Medicine and Surgery	24,900	....	....	....	....	....	....	....	....	....	....	24,900	24,900
Detroit Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
University of Detroit	37,912	....	....	....	....	....	....	75,000	....	5,000	....	117,912	117,912
Michigan Agricultural College	38,418	14,778	....	70,539	70,000	491,000	$138,086	....	....	....	196,717	1,019,538	1,019,538
Grand Rapids Junior College	3,253	....	....	....	....	6,000	....	....	....	....	....	9,253	9,253
Hillsdale College	11,634	995	....	22,698	....	....	....	....	....	4,029	....	39,356	39,356
Hope College	7,638	....	....	25,309	....	....	....	....	6,090	2,531	....	41,568	35,478
Western Theological Seminary	....	600	....	4,500	....	....	....	....	10,000	....	....	15,100	5,100
Michigan College of Mines	7,934	....	....	....	....	72,700	....	....	....	....	4,324	84,958	84,958
Kalamazoo College	10,292	3,101	7,524	38,113	....	....	....	....	....	....	....	59,030	59,030
Olivet College	11,470	2,805	2,535	1,990	....	....	....	....	....	38,118	705	57,623	57,623
MINNESOTA.													
St. John's University	25,000	....	45,000	....	....	....	....	....	....	....	....	70,000	70,000
Seabury Divinity School	....	....	1,200	24,000	....	....	....	....	....	1,150	400	26,750	26,750
Hibbing Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
Augsburg Seminary	2,939	455	....	2,568	....	....	....	....	2,791	25,794	368	34,915	32,124
University of Minnesota	271,322	10,143	124,623	53,052	125,250	1,777,336	129,731	....	....	....	442,012	2,933,469	2,933,469
Carleton College	52,214	45,581	69,290	47,622	....	....	....	65,493	89,466	6,005	24,415	400,086	310,620
St. Olaf College	38,008	12,616	43,480	13,669	....	....	....	....	....	25,391	22,916	156,080	156,080
Rochester Junior College	....	....	....	....	....	....	....	....	....	....	....	....	....
Bethel Theological Seminary	115	1,110	....	8,673	....	....	....	48,535	....	....	6,139	64,572	64,572
College of St. Catherine	30,100	7,280	31,900	....	....	....	....	53,000	6,740	5,400	....	134,420	127,680
College of St. Thomas	54,195	20,000	73,500	7,119	....	....	....	....	....	5,500	13,767	174,081	174,081
Hamline University	30,178	5,000	2,208	31,653	....	....	....	....	82,570	1,350	....	152,959	70,389

Luther Theological Seminary		1,960									25,000	26,960	26,960
Macalester College	15,142	16,873	1,757	32,861						1,721		68,354	68,354
St. Paul College of Law	11,545										1,146	12,091	12,091
St. Paul Theological Seminary													
Gustavus Adolphus College	15,427	1,577	298	12,043						10,300		39,645	39,645
College of St. Teresa	9,000	9,000	59,000						3,000	13,000		93,000	90,000
MISSISSIPPI.													
Mississippi Agricultural and Mechanical College	16,650	3,738	89,970	14,387	15,000	180,494	114,276				204,514	639,029	639,029
Whitworth Female College													
Mississippi Industrial Institute and College	27,621		84,079	9,449	19,600	106,814						245,963	245,963
Grenada College	9,000	300	5,000							3,440	250	17,990	17,990
Mississippi Synodical College[1]	11,162		12,933									24,095	24,095
Rust College (colored)	5,012	2,167	9,191					4,401	4,192	5,641	3,456	33,990	29,887
Belhaven College	6,185		16,056	15,000							3,000	40,241	40,241
Millsaps College	6,446	1,027	5,488									12,961	12,961
Meridian College	30,000		50,000								10,000	90,000	90,000
University of Mississippi	26,774		80,041	42,000		45,688				3,000		147,508	147,508
MISSOURI.													
Culver-Stockton College	3,500	2,000	5,000	7,920						7,500	1,100	27,020	27,020
Clinton Theological Seminary	11,587	4,611	7,752							14,769	6,486	45,205	45,205
Stephens College[1]	37,500	23,500	34,000	2,000					5,300			102,300	97,000
University of Missouri[2]	139,114	9,123	81,712	79,926	65,128	573,319	129,104				132,370	1,209,798	1,209,798
Central College	7,700			23,272					36,206		3,525	70,708	24,497
Howard-Payne College[1]													
Synodical College for Girls[1]	20,000								28,000			48,000	30,000
Westminster College	7,766			13,120				14,776	45,000	17,524		98,186	53,186
William Woods College[1]	24,285		42,798	10,758								77,881	77,881
Kansas City School of Law	12,374											12,374	12,374
Kansas City College of Pharmacy	6,412											6,412	6,412
Kansas City Dental College													
Kansas City Polytechnic Institute.[1]	5,038					109,407						114,445	114,445
Western Dental College	22,774											22,774	22,774
William Jewell College	10,992	5,782	18,100	11,190					37,651	7,226		90,941	53,290
Missouri Valley College	2,355	4,271	1,170	18,000					6,000			31,796	25,796
Hardin College[1]	10,000	4,000	30,000									44,000	44,000
Scarritt-Morrisville College[1]	2,250											2,250	2,250
Cottey College[1]	35,000								1,000			36,000	35,000
Park College	10,411		14,143	27,365				67,762	120,651	33,084	24,553	297,969	177,818
St. Joseph Veterinary College	14,673											14,673	14,673
City College of Law and Finance	8,691	494										9,185	9,185
Concordia Theological Seminary													
Eden Theological Seminary			3,637	4,730						16,336	853	25,562	25,562
Forest Park College[1]	35,000										500	35,500	35,500

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[1] Junior college.

[2] Statistics of 1917.

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917–18*—Continued.

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
MISSOURI—continued.													
St. Louis College of Physicians and Surgeons	$11,480											$11,480	$11,480
St. Louis University													
Washington University	240,807	$16,835	$19,813	$329,253					$102,207	$31,119		740,034	637,827
Drury College	13,114	3,030	7,354	11,687					7,075	2,010	$10,878	55,148	48,073
Central Wesleyan College	15,241			10,223					5,437	1,595		32,496	27,059
Kendrick Seminary			49,000									49,000	49,000
MONTANA.													
Montana College of Agriculture and Mechanic Arts	10,869	3,502	10,506	35,000	$50,000	$212,406	$97,867				20,793	440,943	440,943
Montana State School of Mines	984					38,500						39,484	39,484
University of Montana	15,092	4,544	27,953		70,000	220,000						337,589	337,589
NEBRASKA.													
Union College	22,000	10,612	18,000	5,500						3,500	2,000	61,612	61,612
Doane College	11,803	2,635		14,744				$5,505	8,780	9,306	2,854	55,717	46,937
Hastings College	5,606	2,445	1,069	11,826				692	15,797		16,969	54,404	38,607
University of Nebraska	92,670	582	22,828	57,007	448,794	739,213	118,576				261,442	1,741,112	1,741,112
Creighton University	126,757	5,000	20,000	165,000								316,757	316,757
Presbyterian Theological Seminary				8,000					2,200	7,000		17,200	15,000
University of Omaha	7,788	1,793		75						3,450	20	13,126	13,126
Nebraska Wesleyan University	20,983			13,953				65,000		18,570		118,506	118,506
York College	10,615	960	522	1,745						10,828	1,500	26,170	26,170
NEVADA.													
University of Nevada	1,904	2,868	20,625	15,283		145,035	92,221				19,833	297,769	297,769

NEW HAMPSHIRE.													
New Hampshire College of Agriculture and Mechanic Arts	17,067	12,695	13,778	39,866	50,000	59,075	115,575	125	....	....	65,642	373,823	373,823
Dartmouth College	134,336	96,780	49,019	197,017	....	15,000	....	19,420	15,608	70,228	....	597,408	581,800
St. Anselm's College	....	....	....	....	....	....	....	....	....	....	....	....	....
NEW JERSEY.													
Bloomfield Theological Seminary	....	....	....	9,992	....	....	....	....	23,915	13,021	....	46,928	23,013
College of St. Elizabeth	130,000	11,000	9,000	....	....	....	....	10,000	....	....	....	160,000	160,000
Stevens Institute of Technology	118,689	....	....	71,173	....	....	....	....	6,353	16,377	3,333	215,925	209,572
St. Peter's College	3,600	....	....	600	....	....	....	....	....	....	....	4,200	4,200
Upsala College	3,611	1,909	1,800	8,809	....	....	....	....	....	1,306	....	17,435	17,435
Drew Theological Seminary	5,150	....	7,200	41,000	....	....	....	....	150,000	5,000	....	208,350	58,350
New Jersey Law School	19,500	....	....	....	....	....	....	....	....	....	....	19,500	19,500
Rutgers College	36,004	10,877	....	44,612	....	114,949	110,425	100,000	22,821	29,598	0	469,286	446,465
Theological Seminary of the Reformed Church of America	....	....	....	30,800	....	....	....	....	4,400	1,962	....	37,162	32,762
Princeton Theological Seminary of the Presbyterian Church	....	....	....	....	....	....	....	....	....	....	....	....	....
Princeton University	183,725	93,228	....	284,900	....	....	....	....	81,002	192,836	....	835,691	754,689
NEW MEXICO.													
University of New Mexico	2,822	937	9,962	26,527	....	88,192	....	....	....	....	4,729	133,169	133,169
New Mexico School of Mines	970	2,890	625	22,255	....	22,000	....	....	....	....	428	49,168	49,168
New Mexico College of Agriculture and Mechanic Arts	1,222	1,271	16,326	....	22,995	119,606	99,102	....	....	131	37,469	298,122	298,122
NEW YORK.													
New York State College for Teachers	9,089	....	....	....	1,500	148,158	....	....	....	....	....	158,747	158,747
Alfred University	9,730	3,446	6,052	20,709	....	....	....	13,419	7,195	....	48,682	109,233	102,038
St. Stephen's College	6,760	....	....	3,285	....	....	....	10,022	13,534	19,838	....	53,439	39,905
Auburn Theological Seminary	....	7,300	7,830	51,943	....	....	....	32,933	49,758	16,087	4,074	169,925	120,167
Wells College	21,503	....	47,150	29,155	....	....	....	....	95,547	1,877	2,366	197,598	102,051
Adelphi College	50,209	....	....	7,297	....	....	....	....	5,125	....	13,127	75,758	70,633
Brooklyn College of Pharmacy	48,200	....	....	....	....	....	....	....	....	....	....	48,200	48,200
College of St. Francis Xavier	29,092	....	....	....	....	....	....	....	....	....	....	29,092	29,092
Long Island College Hospital	87,798	....	....	42,000	....	....	....	....	....	....	....	129,798	129,798
Polytechnic Institute of Brooklyn	84,154	....	....	20,065	....	....	....	30,985	....	....	13,367	148,571	148,571
Canisius College	9,388	....	....	2,100	....	....	....	1,000	....	6,000	4,500	22,988	22,988
D'Youville College	8,340	400	6,040	....	....	....	....	....	....	....	....	14,780	14,780
University of Buffalo	160,716	13,995	....	494	....	....	....	....	13,750	....	15,467	204,422	190,672
St. Lawrence University	41,653	....	....	44,447	....	41,728	....	....	45,727	....	123,690	297,245	251,518
Hamilton College	17,498	7,611	10,404	58,190	....	....	....	4,126	3,296	1,425	7,893	110,443	107,147
Elmira College	35,753	....	71,505	....	....	....	....	....	....	....	7,174	114,432	114,432

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917-18*—Continued.

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
NEW YORK—continued.													
Mount St. Alphonsus Theological Seminary													
De Lancy Divinity School				$3,486					$2,500			$5,986	$3,486
Hobart College	$11,395	$5,720	$10,160	38,239					707	$5,411	$63,304	134,996	134,229
Colgate University	39,798	6,152	11,242	63,652						60,021	8,335	184,200	184,200
Hartwick Seminary				200				$1,000		2,000		3,200	3,200
Cornell University	519,015	91,073	319,184	712,781	$82,299	$743,645	$333,386	25,000	48,104	38,759	339,276	3,252,522	3,204,418
College of New Rochelle	23,340		46,681	1,600						8,330	10,000	89,951	89,951
Barnard College	166,114			97,483				207,434	37,153	17,625	215,436	741,245	704,092
Bible Teachers Training School	8,850	7,895	20,274	3,525				48,222	337	91,154	32,566	212,823	212,486
College of the City of New York	46,949				14,685	619,086					21,426	702,146	702,146
Columbia University	1,038,826	142,760		1,369,434					48,021	234,441	1,542,525	4,376,007	4,327,986
Fordham University	171,942	2,652	23,424						8,008	84,760	31,001	321,787	313,779
General Theological Seminary of the Protestant Episcopal Church in the United States		229	22,444	96,321				3,371	52,352	18,811	16,801	210,329	157,977
Hunter College of the City of New York						382,444						382,444	382,444
Jewish Theological Seminary of America				37,658						27,572	267	65,497	65,497
Manhattan College	19,907	4,143	25,929									49,979	49,979
New York College of Dentistry	142,497											142,497	142,497
New York University													
Teachers College													
Union Theological Seminary		4,225		274,432					172,876	4,733	124,674	580,940	408,064
Clarkson College of Technology	7,246			15,040								22,286	22,286
Vassar College	168,761	117,774	273,551	117,474					253,683		706,749	1,637,992	1,384,309
Rochester Theological Seminary				71,702					2,761	3,249	2,003	79,715	76,954
University of Rochester	53,540	1,150		121,358				265	175,302	4,763	6,809	363,187	187,885
St. Bonaventure's College	750	1,140	10,000								6,965	18,855	18,855
Union University	75,098	5,408		71,803					17,722	48,552	29,141	247,724	230,002

New York State School of Forestry (at Syracuse University)					25,009	130,000		1,300				156,309	156,309
Syracuse University													
Rensselaer Polytechnic Institute	113,203	13,004	22,147	89,681				81,100	16,896		12,688	348,609	381,773
Russel Sage College of Practical Arts	17,605	25,907		17,965							4,703	66,180	66,180
United States Military Academy							1,374,646					1,374,646	1,374,646
NORTH CAROLINA.													
St. Genevieve's College	3,795		8,400								1,500	13,695	13,695
Belmont Abbey College													
University of North Carolina	49,014	8,482		12,319	63,812	165,000			3,000	5,057	27,226	333,910	330,910
Biddle University (colored)	265	22	9,593							12,070	1,728	23,678	23,678
Davidson College	29,761	11,469		21,899					19,590	6,287	220	89,226	69,636
Trinity College	21,276	13,149		81,076				2,555				118,056	118,056
Elon College	28,774	9,301	17,061	8,067					2,917	4,610	14,155	84,885	81,948
Greensboro College for Women	27,296	10,504	31,018	5,400				25,842	1,300		7,964	109,324	108,694
Guilford College	10,968	4,000	11,400	9,084						2,112	5,125	42,689	42,689
Davenport College [1]	12,000		21,000	5,500						2,693		41,193	41,193
Louisburg Female College [1]	6,729		10,625	90				500		2,060	1,500	21,444	21,444
Meredith College	38,170	8,420	19,120	9,060					4,690		3,231	82,691	78,001
Peace Institute													
Shaw University (colored)	20,329										28,890	49,219	49,219
Flora Macdonald College	21,652		38,611	673						931		61,867	61,867
Wake Forest College	21,197	4,824		40,611							5,728	72,360	72,360
Weaver College [1]	2,500		15,280	4,350								22,130	22,130
North Carolina College of Agriculture and Engineering	17,190	8,632	59,041	7,500		183,707	134,707				53,519	464,296	464,296
Atlantic Christian College	8,984	2,532	13,717						8,000	6,028	4,651	43,912	35,912
NORTH DAKOTA.													
North Dakota Agricultural College	9,960		14,578	73,181		161,938	106,659				76,163	442,479	442,479
Fargo College	23,812	791	4,892	4,313					4,796	17,852		56,456	51,661
Jamestown College													
University of North Dakota	21,127	4,893	46,938	63,614		190,137					15,128	341,837	341,837
OHIO.													
Ohio Northern University	37,407			2,073					30,000		1,080	70,560	40,560
Municipal University of Akron	10,073			2,955		69,588					1,238	83,854	83,854
Mount Union College	20,933		11,757	28,262					44,229		3,106	108,287	64,068
Ohio University	21,450	17,170	1,757	7,657	24,650	240,287					42,253	355,224	355,224
Baldwin-Wallace College	17,385	5,010	856	31,068				28,240	10,792	11,247	5,377	109,975	98,183
Bluffton College	13,501	2,500	9,917	3,000					77,227		409	106,554	29,327
Cedarville College	2,367			5,214					1,120	1,207	964	10,872	9,752
Cincinnati College of Pharmacy	1,100											1,100	1,100
Cincinnati Veterinary College	7,500											7,500	7,500

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[1] Junior college.

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917–18*—Continued.

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
OHIO—continued.													
Eclectic Medical College	$10,500			$3,500				$1,000	$1,000	$1,000		$17,000	$16,000
Hebrew Union College										63,461		63,461	63,461
Lane Theological Seminary				25,218					2,441	4,198	$4,993	36,850	34,409
Mount St. Mary's Seminary of the West	3,000		$40,000								3,000	46,000	46,000
St. Xavier College	20,500			7,800							5,000	33,300	33,300
University of Cincinnati	134,732			73,614		$273,810				25,325	5,073	512,554	512,554
Case School of Applied Science	73,343			132,500			$7,800	2,000				215,643	215,643
St. Ignatius College	3,859										35,434	39,293	39,293
St. Mary's Theological Seminary													
Western Reserve University													
Capital University	10,385			6,877					3,233	15,467	1,246	37,208	33,975
Ohio State University	155,380	$27,203	6,007	61,020	$227,082	1,440,452	128,149			726	196,579	2,242,598	2,242,598
Bonebrake Theological Seminary	144	290		1,942					20,101	19,152	6,882	48,511	28,410
Central Theological Seminary	375	130		5,449					487	6,638	110	13,189	12,702
Defiance College	15,236	5,051	3,240	18,475				50,896	20,887		1,334	115,119	94,232
Ohio Wesleyan University	106,272		1,158	62,212				60,000	120,000	8,368	1,216	359,226	239,226
Findlay College	13,288	230	1,964	7,156					15,412	8,507		46,557	31,145
Kenyon College	9,115	7,350		46,228					100,000	9,625		172,318	72,318
Hiram College	16,524	4,676		21,488					7,369	12,485	2,278	64,820	57,451
Marietta College	12,081	510		31,819						2,774	3,497	50,681	50,681
Muskingum College	34,100			13,989				46,357	23,745	7,732	3,502	129,425	105,680
Miami University	23,764	20,426	65,270	9,150	21,350	213,875				165	373	354,373	354,373
Oxford College for Women													
Western College for Women	37,666	17,380	46,709	16,535					6,910	31	8,738	133,969	127,059
Lake Erie College	23,818		38,905	11,364				49,598			12,214	135,899	135,899
Rio Grande College	6,794			3,500				24,300				34,594	34,594
Wittenberg College	20,187	2,770	3,723	18,797								45,477	45,477
Heidelberg University	22,717	4,474		14,453						5,260	683	47,587	47,587
St. John's University	15,900			600				1,800	9,900			28,200	18,300
Toledo University	7,779					266,875						274,654	274,654
Otterbein University	26,415	3,801	10,757	11,372				10,000	30,560	6,987		99,892	69,332
Wilmington College	9,277		6,617	7,020					101,000			123,914	22,914

College of Wooster	33,564	12,340	30,237	74,580					4,473	21,258		176,452	171,979
Antioch College	677	335		5,000						3,000		9,012	9,012
United Presbyterian Theological Seminary				12,978						2,156		15,129	15,129
OKLAHOMA.													
Oklahoma College for Women	200		18,000			50,000						68,200	68,200
Phillips University	19,846	2,160	11,808	10,111				700	100,000	10,480	10,921	166,026	66,026
Methodist University of Oklahoma	7,493			1,224						11,690		20,407	20,407
Kingfisher College	5,201			6,091					100	7,614		19,006	18,906
University of Oklahoma	26,372			123,084	525,000	291,260	2,385				3,843	971,944	971,944
Oklahoma Agricultural and Mechanical College	4,841	2,160	28,332	37,500		314,197	128,348				42,866	558,244	558,244
OREGON.													
Albany College	2,420			11,909						1,078	336	15,743	15,743
Oregon State Agricultural College	33,693	48,381		10,973		510,074	131,857				47,552	782,530	782,530
Eugene Bible University	3,827	200	400	14,538				1,247	39,234	4,440	406	64,292	25,058
University of Oregon	22,239			10,681		278,582						311,502	311,502
Pacific University	6,868		7,599	12,220						203		26,890	26,890
McMinnville College	13,233			11,875					41,522	9,241	1,179	77,050	35,528
Columbia Junior College	6,156		2,075	1,278				1,119	10,000	3,129		23,757	13,757
Pacific College	2,669	360	1,500	3,020					15,000	3,946	192	26,687	11,687
North Pacific College	54,232										34,528	88,760	88,760
Reed College	24,719	7,533	16,274	38,703						15,098		102,327	102,327
Kimball School of Theology	412			1,503						3,536		5,451	5,451
Willamette College													
PENNSYLVANIA.													
Allentown College for Women	8,845	1,500	8,654	305				10,773		4,033	560	34,670	34,670
Lebanon Valley College	19,278	4,490	17,738	4,127						11,039	3,485	60,157	60,157
St. Vincent College	40,000		52,634									92,634	92,634
Beaver College	10,367		8,935	757						5,162	288	25,509	25,509
Moravian College		3,831		8,115				44	1,050	8,494		21,534	20,484
Moravian Seminary and College for Women	38,735			1,000				1,200	600			41,535	40,935
Bryn Mawr College	102,382	85,310	99,491	104,319					192,492	11,843	55,364	561,201	458,709
Dickinson College	28,184	3,006	18,922	15,897						300		66,309	66,309
Wilson College	30,731	21,423	44,943	3,286					1,530		4,207	106,120	104,590
Crozer Theological Seminary				37,407					28,000		415	65,822	37,822
Ursinus College	799	6,771	19,889	11,840						11,512	28,617	79,428	79,428
Lafayette College	71,683	13,615		41,012				13,483	127,535	17,408		284,736	157,201
Pennsylvania College	33,000	5,000		16,000					2,000	3,600	2,400	62,000	60,000
Theological Seminary of the General Synod of the Evangelical Lutheran Church in United States				13,000				1,500	2,000	4,200		20,700	18,700

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917–18*—Continued.

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
PENNSYLVANIA—continued.													
Thiel College	$8,500	$775							$30,000	$7,500		$46,775	$16,775
Grove City College	34,920	7,890	$25,609							2,758		71,177	71,177
Haverford College	72,854			$142,855				$15,050	74,416	32,944	$430,231	768,350	693,934
Franklin and Marshall College	21,241			25,198					12,240			58,679	56,439
Theological Seminary of the Reformed Church	195	1,820	5,095	17,311				60,588	3,330	5,145		93,484	90,154
Bucknell University	92,818	8,784	19,592	28,879					37,549			187,622	150,073
Lincoln University (colored)	1,770	1,073	5,365	30,199						9,921	800	49,128	49,128
Allegheny College	45,056	10,699	21,808	41,043							5,670	124,276	124,276
Meadville Theological Seminary									21,548	4,144	48,091	73,783	52,235
Irving Female College	11,690		18,750									30,440	30,440
Albright College	9,228	2,810	16,554	14,765				3,031		75		46,463	46,463
Westminster College	15,686	3,888	11,845	27,236						7,618	5,180	71,453	71,453
Drexel Institute	92,043			108,210							4,261	204,514	204,514
Dropsie College				39,605								39,605	39,605
Jefferson Medical College	99,260			50,000		$97,500						246,760	246,760
La Salle College	20,000											20,000	20,000
Lutheran Theological Seminary			6,082	21,606							8,376	36,064	36,064
Philadelphia College of Pharmacy	50,704										2,319	53,023	53,023
St. Joseph's College	6,480			750								7,230	7,230
Temple University	166,469	5,175				51,709				37,647	2,572	263,572	263,572
University of Pennsylvania	736,200	109,106	110,897	180,021		423,320			826,852	267,137		2,653,533	1,826,681
Woman's Medical College of Pennsylvania	6,929			17,541					20,300	2,254		47,024	26,724
Carnegie Institute of Technology	126,884	61,172	42,884	506,000							85,684	822,624	822,624
Pennsylvania College for Women	26,647	6,200	17,538	2,100						25,891		78,376	78,376
Pittsburgh Theological Seminary		1,822		20,286					5,425			27,533	22,108
Reformed Presbyterian Theological Seminary				3,835						2,460		6,295	6,296
University of Pittsburgh	267,851			26,446	$13,033	324,487					39,216	671,013	671,013
Western Theological Seminary		610		43,045				21,991	22,100	3,474	5,581	96,801	74,701
Susquehanna University	15,000	1,200	24,600	4,000					75,000	5,600	6,000	131,400	56,400

Lehigh University	130,228	13,214	31,337	174,905							17,498	367,182	367,182
Pennsylvania State College	62,873			30,000	78,087	559,300	$188,383				153,269	1,066,352	1,066,352
Swarthmore College	76,337		113,780	100,140					183,798	5,107	582	479,694	295,896
Villanova College	26,295	5,753	52,982	30,000								115,030	115,030
Washington and Jefferson College	23,739										57,985	81,724	81,724
Waynesburg College	5,510			5,171						5,295		15,976	15,976
PORTO RICO.													
University of Porto Rico	1,273			1,865	142	50,000	50,000		329		2,485	106,094	105,765
RHODE ISLAND.													
Rhode Island State College	4,822	8,252	32,589	2,500		40,000	90,582				24,352	203,097	203,097
Brown University													
SOUTH CAROLINA.													
Anderson College	15,400		21,600					35,000			1,500	73,500	73,500
College of Charleston	3,046	179		10,430		6,581						20,236	20,236
The Citadel, the Military College of South Carolina					9,619	60,000					32,481	102,100	102,100
Clemson Agricultural College	14,590		175,632	9,266		268,722	151,526				7,560	627,296	627,296
Presbyterian College of South Carolina	4,638	1,785	9,000	4,398				5,811		7,676		33,308	33,308
Columbia College													
Benedict College (colored)	3,912		18,329									22,241	22,241
Southern Lutheran Theological Seminary			304	3,561						1,961		5,826	5,826
University of South Carolina	12,435	16,157			45,520	93,547					8,114	175,773	175,773
Erskine College	4,210	337		7,009					14,064			25,620	11,556
Furman University	13,238		21,034									34,272	34,272
Lander College	15,430		58,150	680				2,100	3,225	3,660		83,245	80,020
Coker College	24,371		54,698	16,960						557		96,586	96,586
Newberry College	5,000	1,000		5,000						2,000		13,000	13,000
Converse College	44,064		53,489	9,156							3,525	110,234	110,234
Wofford College	14,565	5,330	15,990	11,057					50	8,554	2,954	58,500	58,450
SOUTH DAKOTA.													
South Dakota State College of Agriculture and Mechanic Arts	12,704	3,682		40,285	264,861	204,250	108,445				78,422	710,649	710,649
Huron College	17,438	1,904		33,271					1,035	13,068	503	67,219	66,184
Dakota Wesleyan University	18,756	4,018	13,556	14,133					9,436	17,564	1,448	78,911	69,475
State School of Mines	1,902			5,092		36,500						43,494	43,494
Sioux Falls College	3,500	500	200						25,000	11,800		41,000	16,006
University of South Dakota	16,922	2,915		14,657	162,000	157,500					2,332	356,326	356,320
Yankton College	24,876	5,298	19,800	22,268					6,327	8,236		86,805	80,478

Institutions.	From student fees.			From productive funds	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
TENNESSEE.													
King College	$2,500	$1,200	$3,750	$3,000	....	....	....	$10,000	$20,000	$5,000	....	$45,450	$25,450
Southwestern Presbyterian University	2,331	234	....	14,950	....	....	....	....	....	2,406	....	19,921	19,921
Tusculum College	3,975	1,762	10,040	10,980	....	....	....	1,500	8,791	11,860	$5,671	54,579	45,788
Lincoln Memorial University	11,556	6,017	20,000	6,055	....	....	....	....	....	19,997	59,241	122,866	122,866
Memphis Conference Female Institute[1]	8,500	....	3,200	....	....	....	....	....	....	....	....	11,700	11,700
Carson and Newman College	8,150	1,200	6,000	5,300	....	....	....	30,000	....	1,500	300	52,450	52,450
University of Tennessee	38,413	6,572	9,293	26,252	$1,000,000	$110,585	$134,536	....	....	3,650	30,660	1,359,961	1,359,961
Cumberland University	5,961	1,386	....	4,563	....	....	....	....	....	9,698	....	21,608	21,608
Milligan College	5,154	....	....	....	....	18,000	....	....	....	....	....	23,154	23,154
Tennessee College	27,515	7,750	29,145	600	....	....	....	990	179	1,779	....	67,958	67,779
Fisk University (colored)	15,553	8,297	24,087	14,201	....	....	....	....	....	32,489	956	95,583	95,583
George Peabody College for Teachers	51,353	....	....	98,350	....	....	....	....	....	26,945	43,767	220,415	220,415
Meharry Medical College (colored)	28,024	1,124	....	3,839	....	....	....	8,078	....	15,000	9,194	65,259	65,259
Vanderbilt University	81,188	2,682	....	137,287	....	....	....	....	442,857	11,661	20,149	695,824	252,967
Martin College[1]	13,000	....	19,000	1,800	....	....	....	....	....	6,000	100	39,900	39,900
Ruskin-Cave College	14,210	....	51,190	....	....	....	....	....	....	....	1,350	66,750	66,750
University of the South	36,353	....	69,119	21,816	....	....	....	....	18,200	15,576	13,295	174,359	156,159
Washington College	775	678	2,100	3,500	....	1,000	....	....	....	2,100	878	11,031	11,031
TEXAS.													
Austin Presbyterian Theological Seminary	....	1,000	....	2,500	....	....	....	....	....	8,000	....	11,500	11,500
University of Texas	57,091	....	....	224,234	....	819,453	....	5,000	....	....	....	1,105,778	1,105,778
Baylor Female College	32,026	....	95,891	....	....	....	....	....	250	....	347	128,514	128,264
Howard Payne College	25,013	....	17,971	....	....	....	....	....	5,000	6,308	....	54,292	49,292
Claredon College[1]	17,800	3,600	13,600	....	....	....	....	25,500	....	2,000	....	62,500	62,500
Agricultural and Mechanical College of Texas	2,314	....	169,934	10,450	55,150	478,365	173,415	....	....	....	698,386	1,588,014	1,588,014

Southern Methodist University	67,015		10,691	8,927						33,498	3,222	123,353	123,353
College of Industrial Arts	33,856	2,000	7,500		350,000	163,000					5,238	561,594	561,594
Southwestern Baptist Theological Seminary		3,375	10,125	13,404						29,261		56,165	56,165
Texas Christian University	22,034	12,199	35,329							12,169	13,724	95,455	95,455
Texas Woman's College	57,656	17,062	48,947								5,093	128,758	128,758
Southwestern University	34,539	11,362	23,221	8,997				20,726	19,905	229	7,853	126,832	106,927
Rice Institute	3,900	22,500	33,785	527,000								587,185	587,185
Westminster College	5,000	3,200	5,500	200				2,000	530	4,000	540	20,970	20,440
Texas Military College[1]	12,000	4,000	14,000									30,000	30,000
Thorp Springs Military College[1]													
Baylor University	64,622	39,017	116,299	29,509						1,778		251,225	251,225
UTAH.													
Utah Agricultural College	9,554				59,753	153,228	96,498				46,848	365,881	365,881
University of Utah	26,230				12,500	252,227					40,952	331,909	331,909
VERMONT.													
University of Vermont and State Agricultural College	71,457	14,035	49,407	35,890		67,280	100,063				53,397	391,529	391,529
Middlebury College	23,767	12,120	29,259	40,509		28,800			58,465	3,061	9,442	205,423	146,958
Norwich University	25,025			7,913		20,000						52,938	52,938
St. Michael's College	3,800	600	15,000								700	20,100	20,100
VIRGINIA.													
Randolph-Macon College	12,172			22,404							8,989	43,565	43,565
Virginia Polytechnic Institute	32,460		84,231	20,659	16,666	162,564	124,725				161,441	602,746	602,746
Blackstone College for Girls[1]	64,650											64,650	64,650
Bridgewater College	11,202	2,800	8,647	1,206					50,000	75	400	74,330	24,330
Sullins College[1]	25,000	15,000	52,000									92,000	92,000
Virginia Intermont College[1]	17,388	10,670	16,636					5,000				49,694	49,694
University of Virginia	58,698	8,434		92,928		96,686				14,369	27,073	298,188	298,188
Daleville College[1]	4,390	1,965	7,570	3,350								17,275	17,275
Averette College[1]	25,000									12,000		37,000	37,000
Emory and Henry College	18,000			4,500								22,500	22,500
Hampden-Sidney College	7,871	2,662	194	11,466							1,009	23,202	23,202
Hollins College	43,324		90,962								9,215	143,501	143,501
Virginia Military Institute	36,593	10,640	189,706	3,063	2,500	50,000						292,502	292,502
Washington and Lee University	31,250	1,883		56,928						740	14,573	105,374	105,374
Randolph-Macon Woman's College	98,843		122,668	20,500								242,011	242,011
Virginia Christian College	9,068		16,135							7,284	2,748	35,235	35,235
Virginia Theological Seminary and College (colored)	4,954	2,295	16,156					6,000		10,000		39,405	39,405
Eastern College													
Marion Institute[1]	18,000							5,000				23,000	23,000
Medical College of Virginia	31,325			615		13,333						45,273	45,273

[1] Junior college.

TABLE 29.—*Universities, colleges, and professional schools—Receipts from all sources in 1917–18*—Continued.

Institutions.	From student fees.			From productive funds.	From State or city.		From United States Government.	From private benefactions.			From all other sources.	Total receipts.	Total receipts (exclusive of additions to endowments).
	For tuition and other educational services.	For room rent.	For board, etc.		For increase of plant.	For current expenses.		For increase of plant.	For endowment.	For current expenses.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
VIRGINIA—continued.													
Richmond College	$24,694		$19,721	$49,090					$31,477		$618	$125,600	$94,123
Union Theological Seminary	170	$262		38,958				$100,000	44,907	$7,910	331	192,538	147,631
Virginia Union University (colored)	5,971	3,534	11,827	751						21,437	1,565	45,085	45,085
Elizabeth College	6,789	2,500	8,290						2,000	3,000		22,572	20,572
Roanoke College	7,200	2,100	8,291	8,265					17,170	13,857		56,883	39,713
Sweet Briar College	52,467	104,934									3,151	160,552	160,552
Theological Seminary of the Protestant Episcopal Church			7,700	35,300							350	43,350	43,350
College of William and Mary	3,790		11,947	8,899		$56,250					89	80,975	80,975
WASHINGTON.													
State College of Washington	26,263	8,198		54,517		444,684	$107,393				110,054	751,104	751,104
University of Washington	170,430	4,198	50,667	41,477	$69,017	593,230						929,014	929,014
Gonzaga University	10,000	2,000	40,000									52,000	52,000
Whitman College	29,709	3,044	9,834	27,033					200	656	523	70,999	70,799
WEST VIRGINIA.													
Morris Harvey College	5,855	3,363	17,171	8,500								34,889	34,889
West Virginia Wesleyan College	23,452	3,392	11,831	5,810					51,973		2,910	99,368	47,395
Davis and Elkins College	6,575	642	3,210	4,850						2,609	353	18,239	18,239
West Virginia University	33,332	9,457	9,848	6,462	93,500	413,357	112,191				26,995	705,142	705,142
WISCONSIN.													
Lawrence College	64,099		60,261	42,789				23,711	228,790	2,087	7,929	429,666	200,876
Beloit College	33,293	10,969	18,988	86,580					57,069	5,333	2,943	215,175	158,106
University of Wisconsin	391,996	36,596	128,149	37,618	150,569	1,642,494	135,017			24,863	365,731	2,913,085	2,913,085
Milton College	6,090	161		10,521					47,366	549	125	64,812	17,446
Marquette University													

Milwaukee Downer College	47,005	....	71,216	26,112	....	....	....	374	48,943	175	1,353	195,178	146,235
Mission House	6,161	....	....	1,096	....	....	....	14,778	....	33,691	1,522	57,248	57,248
Ripon College	20,606	$6,978	21,043	19,841	....	....	....	....	42,954	....	....	111,422	68,468
St. Clara College and Academy	21,096	3,827	36,067	....	....	....	....	....	....	....	14,069	75,059	75,060
Carroll College	13,045	817	745	16,232	....	....	....	....	18,863	4,462	11,850	66,014	47,151
Evangelical Lutheran Theological Seminary	....	....	3,200	....	....	....	....	....	....	6,100	....	9,300	9,300
WYOMING.													
University of Wyoming	6,992	....	23,203	22,773	$31,483	$121,404	$93,331	....	....	-960	28,641	328,787	328,787

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 35

AGRICULTURE IN SECONDARY SCHOOLS

A REPORT OF THE COMMISSION ON THE REORGANIZATION OF SECONDARY EDUCATION, APPOINTED BY THE NATIONAL EDUCATION ASSOCIATION

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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REPORTS OF THE COMMISSION ON THE REORGANIZATION OF SECONDARY EDUCATION.

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THE COMMITTEE ON AGRICULTURE.

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[1] Deceased 1920.

THE REVIEWING COMMITTEE OF THE COMMISSION ON THE REORGANIZATION OF SECONDARY EDUCATION.

(The Reviewing Committee consists of 26 members, of whom 16 are chairmen of committees and 10 are members at large.)

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[1] Deceased Sept. 4, 1917.

PREFACE.

The Commission on the Reorganization of Secondary Education emphasizes vocation as one of the seven objectives of education and maintains that there should be a vital interrelation between education for vocation and education for the other objectives. In its report "Cardinal Principles of Secondary Education" (Bulletin No. 35 for 1918, United States Bureau of Education), the commission states:

> This commission holds that education is essentially a unitary and continuous process, and that each of the objectives defined above must be recognized throughout the entire extent of secondary education. Furthermore, it is only as the pupil sees his vocation in relation to his citizenship and his citizenship in the light of his vocation that he will be prepared for effective membership in an industrial democracy. Consequently, this commission enters its protest against any and all plans, however well intended, which are in danger of divorcing vocation and social-civic education. It stands squarely for the infusion of vocation with the spirit of service and for the vitalization of culture by genuine contact with the world's work.

Agricultural curriculums in secondary schools, therefore, should be rich in social and civic content and at the same time contribute specifically to the vocational efficiency of many students. The future of agriculture is dependent not only upon increased knowledge of production but also upon the development of a more satisfying type of rural life.

The report which is contained in this bulletin has been approved by the committee on agriculture and by the reviewing committee of the commission. Approval by these committees does not commit every member individually to every statement and every implied educational doctrine, but does mean essential agreement as committees with the general recommendations.

CLARENCE D. KINGSLEY,
Chairman of the Commission.

AGRICULTURE IN SECONDARY SCHOOLS.

I. INTRODUCTION.

When the committee on agriculture was appointed, agricultural education in secondary schools was so new that opinions and practices varied greatly. During the period of investigation the thought and practice in this field have advanced rapidly. The various phases of vocational instruction, however, are not as yet well defined, and it may take a generation to determine the scope of work and the material essential in order to secure from such instruction the vocational results desired. In no other high-school subject, probably, is the teaching less uniform throughout the country than in agriculture. The nature of the subject prohibits rigidly standardized courses. There must be sufficient flexibility in agricultural instruction to adapt it to local conditions and needs; yet accompanying this flexibility there should be general uniformity in the sequence, nomenclature, and nature of the agricultural courses offered in high schools.

II. AIMS.

Agriculture in secondary schools comprises the elemental and basic portions of the science and art of agriculture found in the best farm practice, including crop production, live-stock raising, marketing, the conservation of soil fertility, and the proper equipping and operating of a farm as a business enterprise and as a place of abode. The scope of instruction described in this report covers the last six years of public-school courses of study. This plan is adopted because of the recent division of school work into the so-called "six-six" plan. Because of the several types of instruction necessary, the aims become threefold, viz, nonvocational, prevocational, and vocational.

Some school time should be devoted to the study of the most important industries of the locality, State, and Nation, largely for the informational value and apart from vocational motives. Since agriculture is the most fundamental of all industries and since the number engaged in agriculture is much greater than the number engaged in any other industry, the schools are justified in devoting some time to the nonvocational study of agriculture.

The prevocational aim is to introduce the growing child to the out-door world, to manual labor, and to the great field of science. This instruction should train the child in the simpler phases of farm practice and at the same time present to him the scientific wonders of the world immediately about him. This instruction should come in the seventh and eighth grades and should be of such a character that if the boy is unable to continue his studies in the high school, his training in agriculture will help him in his future farm work.

Vocational agricultural education is that education which:

(1) gives the skill and knowledge necessary to the control of plant and animal production, to the end of economic profit, and

(2) is so articulated with other education as to promote the most desirable farm community life.

It must be borne in mind that agriculture is more than a vocation; it is a mode of life.

III. COURSES.

In the following outlines the committee attempts to state the aims, methods, and materials of courses in farm crops, horticulture, animal husbandry, poultry, farm engineering, and farm management which should form the essential parts of a four or six year sequence in agriculture. It is assumed that the students have had nature study (or elementary science), and in some cases, a course in essentials of agriculture before the end of the eighth grade.

Adaptation to local conditions.—It is not expected that all the subjects will be given in the order presented. The local school authorities should work out such an order of subjects as will fit local needs. Neither is it expected that a topic will be given equal emphasis in all districts. In adapting any order of subjects to local needs it may be necessary to expand one subject at expense of another.

Adaptation to students.—The material should be adapted to the needs and capacities of the students. Particular care should be taken with those topics dealing with the science underlying agricultural practice that the subject may be kept within the range of secondary students. For example, students may get a comprehension of how plants grow and the principles that underlie plant breeding without going into technical plant physiology and genetics. Likewise, as an aid to a better understanding of the practice of feeding, students should know the simpler aspects of digestion and assimilation, and understand the bas is for scientific feeding. Yet preliminary lessons on these subjects need not involve anything beyond elementary chemistry and physiology. The extent to which those topics are considered will depend upon the students and their training in elementary science.

1. FARM CROPS.

Aim.—The specific aim of the work in farm crops is to enable young people to obtain such a knowledge of the characteristics, propagation, culture, improvement, storage, marketing, and use of the principal local field crops as will prepare them for success in field-crop farming.

Content and methods.—A detailed outline of the content of a course in farm crops would be of little or no value because of the wide variation in crops produced in different sections of the country. When the aim has been agreed upon, it determines, in a general way, the material that should go into the course; but the committee felt it wise to state specifically some of the factors that should be taken into consideration in selecting the topics for study and in determining the time emphasis that they should receive. Even a cursory examination of the work in the agricultural subjects in secondary schools will show a wide variation both in topics and in time-value given the topics. Such variations may be found in schools under essentially the same agricultural conditions. The present status is ample evidence that teachers have given too little thought to the subject.

The following are suggested as some factors which the agricultural instructor should take into consideration in selecting topics and in determining time emphasis:

(1) Local importance of the crop. In general, the most important local crop should be the one to receive the greatest amount of consideration. It should also have the most favorable opportunity for its consideration, e. g., if seasonal factors influence the conditions of its study, it should have the first consideration in time.

(2) The adaptability of the topic to secondary school conditions. Some crops, because of characteristics of growth, may serve better for study purposes than do some others. Among the grains, corn is an illustration of such a crop.

(3) The status of our knowledge with reference to certain subjects makes them poor topics for study by secondary school pupils. What should be done in connection with many topics is to teach the best accepted practice without going into consideration of details of experiments involving doubtful results.

(4) The importance of the crop within the State is a corollary to the first factor. Crops that require climate or soil conditions different from those to be found within the State should receive no consideration. For example, such crops as cotton, sugar cane, and citrus fruits should not be included in a course in agriculture in the Northern States.

(5) In the organization of subject matter, there is no high-school agricultural subject in which there is greater need for the recog-

nition of seasonal sequence. Seasonal organization gives opportunity for almost immediate application on the home farm, and the school has the interest of the home and community to reinforce its teachings. It also makes more available a supply of laboratory and illustrative material. These are desirable educationally, economically, and sociologically.

Use of illustrative material.—In addition to the material that may be collected locally each school should have a land laboratory in which illustrative and laboratory material may be raised. Even when the instructor is employed during the summer months, rarely is a school found that has an abundance of laboratory material. There are advantages in having certain growing crops near at hand for instructional purposes. This land laboratory does not need to be so large that the care of it will be a burden.

Correlation.—It is especially desirable to have a close correlation between farm crops and soils, because there are many phases of the two subjects that can be studied to the advantage of each if they are properly related.

Laboratory and field exercises.—Improvement in the technique of presentation is quite as desirable in farm crops as in other instruction, and it is hoped that the time is not far distant when definite professional training may be required of all secondary-school teachers of agriculture. The character of the instruction received by the teacher during his student days is a vital factor in determining how he teaches. One thing that needs especial consideration is greater unity between classroom instruction and laboratory exercises or field trips. The laboratory work in the college frequently has as its main purpose the development of technique and usually is quite independent of the lecture. As a result of seeing such courses run independently of each other, the teacher who is fresh from the college of agriculture is very likely to pursue a similar method. The committee believes that whether or not such separation is desirable in the college, there should be the closest possible relationship in the secondary schools. Careful planning is necessary to secure the desired unity.

Home projects.—The home project should be an integral part of the work in farm crops, and the completion of a minimum project should be required before credit is allowed for the course. The home project, or project on a farm where the student is employed, is indispensable in the successful teaching of farm crops. If the vocational purpose is to be realized, it is necessary to give the student an opportunity to apply through practice the knowledge gained through study. In general, the best place to try out this knowledge is the home farm, and a part of the study of every student should be devoted to planning projects carried out under the conditions found at his home and to observing them closely as they develop. The home project has very decided advantages in testing his theory by application, in the demands which it makes upon the student's managerial ability, in its effect upon farm practice, and in its economy of operation.

Use of reference material.—Books should be used simply as a means of assistance in solving the problems presented by the project work, the home experience of the student, the laboratory, and the field trips.

2. ANIMAL HUSBANDRY.

Aims.—The specific aim of the work in animal husbandry is to enable young people to obtain such a knowledge of the characteristics, breeding, feeding, care, and management, and marketing of the domestic animals commonly raised for profit in that region as will prepare them for success in live-stock farming.

Content and methods.—The course in animal husbandry which will fit the needs of the majority of secondary schools is a general course of one unit. Such a course may cover in a general and fundamental way (1) the types and breeds of farm animals, (2) the care, feeding, and management of farm animals, (3) the improvement of farm animals, (4) milk and its products, (5) poultry, and (6) bees. The sequence of the topics, their relative importance, and the manner of treatment will depend to a great extent upon local conditions. Such a course furnishes a foundation for special courses which may follow and covers the general field in such a way that the student may readily use that which he has obtained if he goes no further.

If less than a full year is devoted to the subject, no attempt should be made to cover the whole field. A study of the types and breeds, general principles of breeding, care, feeding, and management should be developed as far as possible in their application to the groups of animals of greatest local importance. If more than one year is available for animal husbandry, special courses may be given relating to the groups which best fit the needs of the individual students. The two subjects which fill these requirements in the majority of cases are dairying and poultry husbandry. In the application of the vocational aim to either the general or the special subject ample time should be allowed for practical work.

Use of illustrative material.—The living animal should be given first place in concrete instruction. As a rule the school can not maintain any extensive herds or flocks. Therefore field trips to surrounding farms must be given a prominent place in this instruction. Extensive use should be made also of pictures which may be obtained from farm journals. The use of original photographs should be encouraged, especially when used in the form of lantern slides. Charts of many forms should also be used and may be reproduced to good advantage in lantern slides, on the blackboard, or on paper or cloth in permanent form.

Laboratory and field exercises.—A small portion of the secondary school course in animal husbandry is adapted to the usual laboratory methods. The greater part of such work given should be in practicums, i. e., exercises in which the principles considered in the classroom may be applied to practice and which have as their chief aim the acquiring of skill. Examples of practicums which may be carried on at school are the testing of eggs and the use of the Babcock test in determining the butter fat in milk.

For the greater part of the practicums in animal husbandry the farm should be used as the laboratory. Practice in stock judging, killing and dressing animals for meat, and treatment for pests and diseases must all be given where the animals are available. As in the study of the living animals, such practice means the use of animals on surrounding farms and the home farms of the students. Certain types of practice may be worked out best as individual assignments for home practicums. Examples of such exercises would include teaching a calf to drink, care and management of a setting hen, and training a colt to lead.

Home projects.—The following projects are suggestive of work which may be done on the home farm in connection with the course in animal husbandry:

Care of calves on personal account.
Care and feeding of one or more cows for one year.
Developing a local milk or butter trade.
Production of baby beef.
Fattening cattle for the market.
Developing swine for breeding.
Feeding swine for pork production.
Care of sheep on personal account.
Care of sheep for share of increase.
Care and management of poultry.
Care of bees on personal account.

Use of reference material.—Inasmuch as the course of study should be adapted to meet the needs of the students and the community in which they live, the teacher can not hold to any one textbook. To supplement the text, abundant use should be made of bulletins, live-stock journals, and reference books. In adapting the course to meet the needs and interests of individual students, special study and reports should be required.

Equipment.—The teaching of animal husbandry is not dependent upon extensive or elaborate equipment at the school. A stereopticon with sets of slides showing types and breeds and equipment and methods of production will prove helpful, as will the charts, models, and pictures suggested as illustrative material. A supply of score cards is needed for judging. The amount of equipment for dairying will depend upon the nature of the course given and the needs and resources of the school, but a Babcock testing outfit should be in every school teaching dairying. A hand separator and a hand churning outfit may usually be obtained with little expense.

2A. POULTRY.[1]

Aim.—The specific aim of the work in poultry is to enable young people to obtain such a knowledge of the characteristics, breeding, feeding, care, and management, and marketing of farm poultry as will prepare them for successful poultry raising.

Content and methods.—1. Successful local poultry farms should be visited, or, if that is not possible, trips should be arranged to include some good plants.

2. Local poultry organizations should be established to go hand in hand with the instruction.

3. Breeds should be judged and scored, and exhibits held to stimulate interest and competition.

4. A careful study of type should be made, with all possible reference to exterior attributes as correlating with egg production and meat production.

5. Careful record of production should be kept on one or more pens, comparing either various types or breeds.

6. Selection of breeding pens emphasizing underlying principles, and based upon egg or meat production, should be practiced.

7. If the school possesses some poultry, a trap nest demonstration should be carried out by various members of the class taking charge in turn. A careful and accurate record may be kept of pullets laying earliest, and of size of the egg-litters. It is a superior method of comparing type with performance.

8. A thorough study of feeds should be made to acquaint students with appearance, quality, nutritive values, palatability, and economy. Figuring rations and mixing sample rations should be conducted.

9. Incubators and brooders should be studied and operated, young chickens reared, and records kept. Economy of various rations or methods of feeding should be shown here.

10. Study of egg structure and function of various parts should be made.

11. Candling, grading, and packing eggs; study of markets and best methods of shipping; use of parcel post, including best types of packages, should be given attention.

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[1] While "poultry" is logically a part of "animal husbandry," it is given special treatment here because of its widespread occurrence, its adaptability to public school teaching, and the degree to which it differs from the other divisions of the main subject.

12. Killing, dressing, and packing poultry, and fattening demonstrations may be conducted by classes.

13. Study of poultry diseases and pests; and use of lice killers and preparation of sprays and washes should be included.

14. Reports on current poultry articles of practical value should be prepared.

Equipment and supplies.—The following materials provide necessary and convenient laboratory apparatus and suitable supplies:

1. Sample pens of a few important breeds, either owned by the school or borrowed.
2. Various types of poultry houses, portable or fixed; interior fixtures, such as water fountains, feed hoppers, troughs, water stands, grain-sprouting racks, and models of trap nests and fattening crates, many of which can be designed and constructed in wood-working shop at school or home.
3. Samples of various grains and mill-feeds with analyses and local prices.
4. Incubators and brooders, punches and rings for marking hatches.
5. Candling devices for studying eggs and testing fertility.
6. Young chicks for rearing and feeding work.
7. Poultry to kill, dress, and pack. Killing knives, blood cups, plumping forms, carting frames, etc.
8. Materials for lice killers and apparatus and materials for cleansing sprays and washes.
9. Samples of various parcel-post egg carriers and poultry containers.
10. Score cards and record blanks furnished by the state agricultural colleges.
11. Reference books and Government bulletins, also state bulletins on all previous topics.

3. SOILS.

Aim.—The specific aim of the work in soils is to enable young people to obtain such a knowledge of the most important principles of the formation, properties, and management of soils, applicable primarily to their own vicinity, as will prepare them for successful production of maximum crops and maintenance of soil fertility.

Content and methods.—The course in soils should attempt to acquaint the students with the following points:

1. Types of soils and their relation to plant growth.
2. Relation between soil texture and soil water.
    Movement of water through the soil.
    Capacity for holding water, etc.
3. Relation between color, temperature, and moisture in soils.
4. Methods of soil management and soil improvement by (*a*) drainage, (*b*) liming, (*c*) cultivation, (*d*) fertilization, (*e*) crop rotation.

This will require the use of both laboratory and field to supplement text study. Local conditions as to climate, weather conditions, etc., will in a measure control the amount and nature of the field work, but, as in all such work, it is essential that it be carefully planned and that all details be arranged in advance. Students should understand thoroughly the purpose of the trip and just what is expected of them The observations made should be followed by classroom discussions and supplementary laboratory work. The use of lantern and slides when available will add much both to the value of the instruction and to the interest of the class, for the reason that it is impossible to see in a limited area and time many of the conditions and processes of soil formation which should be seen in order fully to understand the subject. Where the lantern method is unavailable, use should be made of post-card views, photographs, and magazine illustrations.

It is possible to do a considerable amount of work in soil physics and soil chemistry in secondary schools, the amount depending upon the equipment and time available and the age and advancement of the pupils. In most cases, however, it is better to attempt only the more elementary principles that have a direct bearing upon plant production, leaving the more scientific portions for later study.

Under ordinary conditions it is inadvisable to invest in expensive equipment for soil work. Much, if not all, that is needed, such as chimneys, boxes, and tin cans, can be provided or made by the pupils themselves. This affords an opportunity for correlation with the manual training departments. Often making apparatus will be of as much value as performing the exercise. This does not mean, however, that an excessive amount of time should be devoted to the making of apparatus.

In the selection of laboratory and field exercises local conditions should be considered. Many exercises, such as those dealing with capillary attraction, percolation, effect of mulches, etc., might easily find application anywhere; others will have only local importance.

Laboratory exercises.—The various manuals on soils contain outlines which may readily be adapted to local conditions. The following suggestive list of topics has a comparatively wide application and calls for a limited amount of equipment.

(1) Water capacity of soils.
(2) Effect of drainage on germination.
(3) Effect of color on temperature.
(4) Effect of lime.
(5) Lime requirement of a given soil.
(Several methods are quite widely known. Consult your State Experiment Station as to the method to be used.)
(6) Fertilizer tests.

4. HORTICULTURE.

Aim.—The specific aim of the work in horticulture is to enable young people to obtain such a knowledge of the characteristics, propagation, culture, improvement, harvesting, storage, marketing, and use of the principal local vegetable and fruit crops as will prepare them for success in vegetable and fruit raising.

Content and methods.—The field of horticulture is so rich in material that is interesting to high-school students and so valuable as training for a vocation or an avocation that it is difficult to determine what to teach during the year or half year usually allotted to this subject. The subject matter varies widely, according to climatic conditions, and the relative importance of the subject in different localities is an important factor in determining the choice of material. The high-school course in horticulture should include concrete work adapted to local conditions in each of the following general lines:

(*a*) PLANT PROPAGATION AND VEGETABLE GARDENING.

This should stress the home garden. Vegetables adapted to the local home gardens should be studied; also the preparation of seedbed, seeding and transplanting, cultivation and harvesting, insects and diseases. In special truck regions market and truck gardening should be given due consideration.

(*b*) FRUIT GROWING.

This is a very comprehensive subject and should include methods of propagation, planting, cultivation, pruning, enemies and their control, harvesting, marketing, etc. Only those fruits should be selected that can be grown in the community.

The small fruits and orchard fruits adapted to the farm should receive chief emphasis, but commercial fruit growing should be studied in those communities adapted to the industry.

(*c*) IMPROVEMENT OF HOME GROUNDS.

This division of the subject should include a study of trees, shrubs, vines and flowers adapted to landscape use in the community (especially the native landscape material); the fundamental principles of choice and arrangement of material for landscape effect; the propagation and care of this material; the making and care of lawns; and planning and arrangement of driveways, fences, outbuildings, etc. Individual home grounds should be assigned for improvement plans.

Use of illustrative material.—Carefully selected and preserved materials should be kept to illustrate all points for which fresh material may not be available. Examples of such material are:

Insects showing stages in life history, samples of diseased fruits showing characteristic effects of disease, and representative samples of fruits and vegetables to show types and varieties. The various tools and implements suitable for use in the community, with the price of each and the address of the manufacturers, should be included in the equipment for illustrative use. Among these are pruning implements, spraying equipment, garden tools, budding knives. There should be lantern slides and photographs showing orchard management, landscape effects, methods of pruning trees, tomatoes, and grapes, containers for shipping horticultural products, etc. Such collections as vegetable seeds, nuts, and specimens showing effects of pests and diseases should be kept for use in the class. Charts of various kinds will be useful.

Correlations.—The subject matter of horticulture can be presented in a variety of sequences. The sequence as to the years in which the subject matter is taught is not so important as the seasonal sequence. Actual gardening should always be a part of the vegetable gardening course. Usually spring and summer are the ideal time for this work. Fruit growing and landscape work are adapted to every season, but winter and spring are especially desirable for study of these subjects.

The correlations of horticultural work with biology should be emphasized. The propagation of plants and the pruning of trees and shrubs may be closely correlated with botany, while the study of insects and methods of combating them may be correlated with zoology and entomology. There is an advantage if the biological sciences accompany or precede the work in horticulture.

Laboratory and field exercises.—The following general suggestions are given to guide in the selection of laboratory and field exercises:

1. Vegetable Gardening.
    (1) Plan and grow a demonstration home garden.
    (2) Construct hotbeds and cold frames.
    (3) Give practice in transplanting.
    (4) Study and use spraying materials and equipment.
    (5) Give practice in preparation and packing of vegetables for market.
    (6) Give practice in canning vegetables.
    (7) Give practice in harvesting and storing vegetables.
2. Fruit Growing.
    (1) Grow seedling apples, peaches, etc.
    (2) Propagate, by the best adapted method, each of the fruits adapted to the locality.
    (3) Give practice in planting, pruning, and spraying fruit trees and bushes.

  (4) Give practice in planting, pruning, training, and spraying grapes.
  (5) Study different types of smudge pots.
  (6) Study different fruits for types of containers for packing.
  (7) Give practice in fruit grading, packing, and storing.

3. Improving Home Grounds.
  (1) Study excellent examples of landscape work in the community.
  (2) Study landscape material adapted to the locality.
  (3) Use lantern slides for good examples of materials and effects when community does not furnish examples.
  (4) Study catalogues of landscape material.
  (5) Give practice in propagating, planting, pruning, and care of ornamental bushes and trees.
  (6) Give practice in managing hotbed and greenhouse.
  (7) Plan individual home-ground planting.
  (8) Make and execute design for ornamenting school grounds.

Home projects.—There are numerous valuable horticultural projects that can be carried on at home. Among them are: Vegetable gardening; growing tree fruits; growing small fruits, such as strawberries, raspberries, dewberries, currants, grapes; planning and planting of home grounds.

Use of reference material.—It is usually best to have the pupils buy books which include both vegetable gardening and fruit growing. The reference books and bulletins should be adequate for supplementary work. The bulletins from the local agricultural college and other agencies should be made use of to insure adaptation to local conditions. Catalogs of local nurseries will usually give valuable information on types and varieties of horticultural products and ornamentals adapted to the locality.

5. FARM ENGINEERING.

Aim.—The specific aim in the work of farm engineering is to prepare young people so to plan, locate, construct, and maintain farm buildings, fences, roads, and drainage (or irrigation) systems; and so to select, operate, and maintain farm machinery and mechanical equipment as to contribute most highly to the profit and pleasure of farming.

Content and methods.—A half-year course in rural engineering will meet the needs of most secondary schools, although a full year may be spent profitably upon the subject if the time is available and there is opportunity for a large amount of practical work. If but a half-year course is given it may be necessary to allow extra credit for projects. The course should cover in a general and fundamental way the following phases of the subject: (*a*) Farm machinery and equipment and farm power, (*b*) farm structures, (*c*) farm sanitation, (*d*) agricultural surveying, (*e*) farm drainage, (*f*) irrigation, (*g*) roads. (See also following topics.)

Correlation.—Farm engineering may be taught as a special subject, or phases of the subject may be taught in an elementary manner in connection with other courses. It is recommended by the committee that farm engineering be taught as a separate subject in schools which give three or four years of agricultural instruction, have suitable equipment, and have a teacher with special training for the work. In case no special course is given, more attention should be given to simple phases of farm engineering in connection with other courses. Although farm engineering may be considered in a special course, there are phases of the subject which, if these subjects are to be made practical, are inseparable from other phases of agriculture. In such cases the more technical phases of the subject involving engineering problems should be reserved for the course in farm engineering or the work should be done by the two classes in cooperation.

Laboratory and field exercises.—In connection with this course the students should have practice at the school in as much of the following work as time and equipment will allow: (*a*) Setting up, use, and repair of farm motors and machinery, (*b*) concrete construction, (*c*) planning farm structures, (*d*) construction of minor farm buildings, (*e*) construction of fences, gates, and other farm equipment, (*f*) installation of water, sewerage, and lighting systems, (*g*) elementary surveying, (*h*) laying out drainage and irrigation systems, (*i*) construction and use of terrace level and road drag, (*j*) belt lapping, harness repair, making knots and splices, and such handicraft work as may fit the needs of the students and the community and has not been provided in earlier courses.

A survey of the community with regard to its sanitary conditions and needs, its roads, water supply, drainage, and irrigation needs will be of great benefit to the teacher and the class in connection with classroom work. It may also be made a basis for general community service along the lines most needed and in which the school is best able to serve.

Home projects.—Any of the lines of work suggested below may be either group projects carried on by the class or by a number of the students at the school or upon neighboring farms, or individual projects conducted upon the home farms:

Construction of farm buildings.
Laying out irrigation and drainage systems.
Road making and maintenance.

Equipment.—Schools owning a well-equipped farm have a distinct advantage in giving a course in rural engineering. There is a special advantage where a school is improving its farm and equipment if the organization is such that the students may perform a large share of the work. On some school farms, which are highly successful from an educational point of view, the students, under competent supervision, erect the farm buildings, install all improvements, such as the water, sewage, heating, and lighting systems, set up and operate all new machinery and implements, and have the greater part of the care and repair of the equipment of the school as well as the school farm. Schools not having a farm should take advantage of the equipment and improvement needed at the school, on neighboring farms, and on the home farms of the students.

One of the most important features of equipment for rural engineering is a shop or workroom equipped for both woodworking and ironworking. Such a shop should have the tools and equipment essential to a well-managed farm. The farm equipment made, if it has not been made for a specific purpose at the school, should be such that the students may take it home and use it. As a rule, the making of models is not to be encouraged, when useful articles may be made. The home farms of the students and surrounding farms will furnish an abundance of equipment needing repair. Near-by implement dealers are often willing to furnish opportunity for study and practice in connection with farm machinery.

6. FARM MANAGEMENT.

Aim.—The specific aim of the work in farm management is to enable young people to obtain such a knowledge of sound principles and correct practices essential in the proper selection, organization, equipment, and operation of a farm as a business enterprise as will prepare them for financial success in farming.

Content and methods.—A half-year course in farm management will meet the needs of most secondary schools, although a full year may be spent profitably upon the subject if the time is available and there is opportunity for a large amount of practical work. The course should cover in a general and fundamental way the following phases of the subject: (*a*) Relation of farming as a business to other industries and to rural life, (*b*) opportunities in farming, (*c*) capital, credit, and land tenure in relation to agriculture, (*d*) types of farms and systems of farming, (*e*) planning and replanning the farm and farmstead, (*f*) farm equipment and improvements, (*g*) maintaining the fertility of the land, (*h*) cropping systems and crop management, (*i*) farm labor, (*j*) management of live stock, (*k*) farm records and accounts, (*l*) marketing farm products and (*m*) cooperation in agriculture.

Classroom instruction.—Although it will prove profitable to base the classroom instruction upon a textbook, the course should be adapted to the special needs of the students and the community in which they live. Such adaptation and a general vitalization of classroom instruction may be had by: (*a*) Abundant use of reference material, (*b*) surveying local conditions, (*c*) use of illustrative material, (*d*) introduction of problems, (*e*) debates on live questions, and (*f*) connecting work of the classroom in a definite way with practical work.

Local surveys and field trips.—If the course in farm management is to be adapted to meet local needs, the instructor must know those needs definitely. He should have knowledge of the best of the local systems of farm management. To secure this knowledge it will be necessary for most teachers to make several definite but simple surveys of the local region. It is especially important to know conditions prevailing upon the home farms of the class members. In connection with the course in farm management, each of the students should later make an analysis of the home farm business, not only for the training that such a study gives in itself, but also to secure data to be used as a basis for further work in applying the principles of farm management to local conditions. Field trips for the purpose of making a first-hand study of farms and farming methods are valuable.

Use of illustrative material.—Illustrative material suitable to use in connection with farm management may be in the form of charts and maps for showing farm management and economic data in a graphic manner, and lantern slides and mounted pictures for showing the good and bad in farm management, as well as for showing farm plans and tabulated data.

Problems.—In connection with many of the lessons it will be profitable to give practice in working out arithmetical problems and problems which will involve reflective thinking as to methods of management and courses to pursue under given conditions.

Debates.—Some questions suggested will be debatable and will be of sufficient general importance and interest to call for a debate before the class. Such debates on well chosen subjects of local importance will do much to develop interest and promote investigation.

Practical work.—The work in farm records and accounts should involve a large amount of practice. Students who have had no bookkeeping will need practice in application of the elements of accounting to farm accounts. The analysis of the farm business, referred to above, may have given sufficient practice in making farm inventories; if not, inventory making should here be taught as essential to complete farm records and accounts. The keeping of records and accounts throughout a farming season may be considered a worthy project for a student in farm management. Blanks for this can usually be obtained from the State College of Agriculture or the United States Department of Agriculture.

Wherever a student has opportunity to assume responsibility for the management of an extensive farm enterprise, such work should be credited as a farm-management project, if it is connected in a definite manner with the course given and meets the other requirements of a home project. In connection with problems of planning and replanning, practice should be given in making maps of farm plans. In studying how to choose a farm, practice should also be given in scoring. Practice should also be given in scoring and comparative judging of special features of farm management, such as proportion of live stock to field crops, crop-rotation systems, labor economies, etc.

Use of reference material.—It is desirable to use an elementary textbook and supplement it by more advanced references bearing on special phases of farm management and rural economics, and by bulletins and material from the agricultural press. State publications should be used to adapt the course to local needs. Special assignments should be made in adapting the instruction to the needs of individual students.

Equipment.—Inasmuch as the farms of the community will serve best for most of the laboratory work in farm management, comparatively little equipment is needed for teaching the subject. Such materials as are needed for classroom instruction and practical work may be grouped as follows: (*a*) Lantern slides,[2] charts, maps, and pictures, (*b*) a number of good books and a collection of bulletins pertaining to farm management, catalogued in such a manner that they will be readily available for reference use, (*c*) drawing material for making maps and plans, (*d*) books and blanks for practice in farm bookkeeping, (*e*) score cards and survey forms for study of farms.[3]

IV. HOME PROJECTS AND LOCAL EXTENSION WORK.

1. THE HOME PROJECT.

Agricultural resources.—Vocational agriculture requires the use of land and livestock. Some educators have held that secondary-school agriculture can not be made vocational unless the school operates a farm. Others have advocated that the school farm may well give way to the use of the home farm under the home-project plan. It is the opinion of this committee that all available resources should be used to give secondary-school agriculture greater educational value. In some sections and under some conditions school farms have been provided as the most practical solution of the problem. In other sections the home-project plan has established itself.

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[2] It is assumed that the school has a stereopticon for general use.

[3] Consult your State college of agriculture.

In still other sections both plans are used. In all cases teachers should make abundant use of surrounding farms.

Essentials of a successful project.[4]—A home project has been described as including each of the following requisites: (1) There must be a plan of work covering a season or an extended period of time: (2) it must be a part of the instruction in agriculture of the school; (3) there must be a problem more or less new to the pupil; (4) the parents and pupil should agree with the teacher upon the plan; (5) some competent person must supervise the home work; (6) detailed records of time, method, cost, and income must be correctly kept on suitable farms; and (7) a written report based on the record must be submitted to the teacher.

Classification of projects.—If a project is participated in by several students as a class, or portion of a class, it would be considered a *group project*, e. g., building a chicken house, or spraying an orchard. If the essential parts of the project are the work of one pupil it would be called an *individual project*, e. g., growing a vegetable garden. Individual home projects may be classed according to the chief aim as follows: (*a*) Productive projects—in which the chief aim is to produce any agricultural product at a profit. (*b*) Trial projects—in which the chief aim is to test materials and methods in agricultural practice new to the student. (*c*) Improvement projects—in which the chief aim is to make improvement regardless of immediate financial returns. (*d*) Management projects—in which the chief aim is to apply efficiently the general principles of farm management.

Connecting project study with project work.—Inasmuch as the projects must be adapted to the needs and resources of the individual students there must be some plan for individual study. Individual outlines have been used successfully as an aid in planning the work, and as a guide in the study of the subject. Such outlines may be prepared by supervisors and teachers or by students under the direction of their leaders. Definite references will aid the student materially in his project study.

There has been considerable discussion as to whether the project study shall precede or follow the project work. In some cases the agricultural instruction has followed the practical experience gained in the project; and in other cases the project has followed the instruction of the school. There is educational advantage in basing discussion of more or less abstract principles on the concrete experience obtained in the practical work. There is also sometimes economic advantage in a study of practical problems before they are worked out in projects. It is reasonable to assume that, as a rule, it is best to have the instruction and practical training run parallel and that every effort should be made to correlate principles and practice. A number of teachers have proved this assumption to be correct.

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[4] For fuller treatment see Federal Board for Vocational Education Bul. 21, Agric. Series No. 3, entitled "The Home Project as a Phase of Vocational Education," and U. S. Dept. of Agric. Bul. 346, "Home Projects in Secondary Courses in Agriculture."

School credit for project work.—Credit should be given project work according to its educational value. Work of a technical nature involving new problems and the *acquiring of new skill continually throughout the project* may very well be given credit on the same basis as laboratory or field work. While the giving of school credit for practical work is a local administrative problem, the general rule above stated should hold. Rating of the project work should be given according to its merits. Work not reaching a certain grade should not be given credit.

Substitutes for home projects.—Resourceful teachers will take advantage of farms surrounding the school, not only for such class practicums as judging live stock and the pruning and spraying of trees, but also for more extensive individual projects. Work upon well-managed farms may be secured for students who do not live upon farms or who do not have opportunity for project work upon their home farms. A student in horticulture may secure work on a truck farm, a fruit farm, or in a greenhouse for a part of his time during the school year and during the summer months. Likewise a student in animal husbandry may secure work on a poultry farm, a dairy farm, or a general stock farm. When the farms are of a high standard and use modern methods and equipment, there is no doubt that such work will involve new experiences for the student who has no opportunity for such work at home. If the work is given supervision, if records and reports are required, and the work in other ways is connected definitely with the course the student is pursuing, it should have a decided educational value and should be credited as a substitute for a home project.

Use of the school farm.—School farms are most essential and have proven most successful where the majority of the students in agriculture are living at the school. The farms are used as a source of supply for school boarding houses, as a source of revenue, as a source of illustrative material for classroom and field instruction, as a means of demonstration to students and patrons, and as a means of training in practical farming. Although various means and methods have been worked out for the utilization of student labor on school farms there is great need of connecting the practical work of the farm more closely with the instruction of the classroom and laboratory and thus giving it greater educational value. Some schools have found that it is profitable from an educational point of view to give the students greater responsibility with respect to their farm work and to allow them to participate in the results of their labors. This idea is essentially an application of the project plan to use of the school farm The school farm projects may be grouped as follows: (*a*) Group projects, (*b*) individual projects.

Group projects.—There is excellent opportunity upon the school farm to develop group action and the cooperative spirit. Entire classes or groups of students who have similar interests and needs may be assigned projects in which they must work together. The following are examples of such projects which have been carried out successfully: (*a*) Erection of farm buildings, (*b*) installation of sewerage, lighting, and water systems, (*c*) planting and care of a model kitchen garden, a model orchard, or small fruit garden, and field plots for demonstration purposes, (*d*) care and management of a farm dairy or flock of poultry, or (*e*) renovating an old orchard.

There is also abundant opportunity for developing cooperation in connection with individual projects on the school farm. It is often more economical than would be separate action for students to combine their efforts in the preparation of the land, in the harvesting and marketing of crops and in other operations required to carry out their individual projects.

Individual projects.—The success of the home project plan has turned the attention of some agricultural schools toward the application of the plan to the work of the school farm. Individual students may be permitted to choose a project to carry out upon their own responsibility on the school farm. One student may have an acre devoted to corn or potatoes, another a half acre in garden truck, one student a flock of poultry, another one or more pigs. The students may be charged rent or interest on the land and equipment used and participate in either profit or loss on their projects. The general work of the farm may also be assigned to individual students. One student may be given charge of a team of horses and made responsible for their use and welfare, another given charge of the dairy barn and held responsible for the care of the cows and the milk and the records of feed consumed and milk produced. If such students are allowed to participate in profits or given some extra compensation it adds stimulus to better work.

One of the greatest problems in carrying out the project idea on the school farm arises from the fact that the students are not at the school throughout the year. It may be possible for students with animal projects, such as chickens or pigs, to take their animals home with them for the summer. In the case of such plant projects as field corn or potatoes it may be possible for the students to cooperate and employ one or more of their number to care for their crops during the summer. The problem varies with schools and different sections of the country and must be worked out according to local conditions.

2. LOCAL EXTENSION WORK.

With the coming of special teachers of agriculture into the rural high schools there has come a new conception of the function of such schools, a conception not bounded by narrow pedagogical dogmas. Through effective service it encompasses the whole community, the children in the school, the young people just out of school, the men and women on the farm, and the teachers and pupils in the neighboring elementary schools. The special teacher of vocational agriculture, usually from the State agricultural college, brings with him the agricultural extension ideas of that institution and much of the enthusiasm and spirit of public service of the extension workers.

Method of procedure.—While this enthusiasm is a very valuable asset, it is believed that before attempting extension work those responsible for conducting it should study the agriculture of the community to learn what is being done and what is worth while in each locality. He should know such things as the soil, the improvements, the transportation lines and the markets, the systems of farming followed, and the farmers themselves. Such information is fundamental to intelligent agricultural rural development.

The meaning of extension work.—The committee believes that it is proper for a public high school that is doing good work to extend itself to the people, but that it should not begin the process until it has something to extend. Not every high-school instructor in agriculture is qualified to do extension work. The instructor should first show in the teaching of his pupils that he is competent to extend his instruction to the patrons of the school. Extension efforts should be the result of work rather than the beginning of work. One is likely to make the mistake of beginning the extension work first, whereas the extension work should grow gradually as the school work in agriculture grows and be the natural expression among the people of the work that arises in the school itself.

Relationships.—All sorts of schemes are broached nowadays in the interests of better agriculture and country life. These need coordinating, but they can not be coordinated except on some basic principle. We have in agricultural extension work no more important problem than to try to determine in the next few years the groundwork on which may be based a correlation of labor that shall be both scientific and practically efficient with reference to the relationship of high-school extension in agriculture to other publicly supported agencies to Federal agencies, and the relationship of all to privately supported agencies. We must determine the way in which the community, the county, the State, and the Nation can cooperate in harmonizing and making effective as a great national movement the whole problem of agriculture and country life.

Classification of extension work.—It seems to be fairly well understood that work done either at school or away from school relating to the training of pupils should be considered purely instructional in character. All such work as classroom instruction, laboratory exercises, school or home projects should be so considered.

Extension work, then, must be that which deals with those who are not in school. The committee finds that such activities on the part of the school group themselves under three heads, namely, direct, indirect, and incidental extension.

Direct extension would include well-planned activities. Such work should be done in close cooperation with the agricultural colleges and the United States Department of Agriculture, and may include such activities as (1) acting as organizer for the one-week short course for farmers, (2) offering personal counsel and advice on certain days to farmers of the community and assisting in the organizing of farmers' clubs, (3) assisting in organizing farmers' reading courses, (4) directing school agricultural exhibits locally and at the county fair, (5) meetings with farmers and farm visitation, (6) organizing and following up boys' and girls' clubs, (7) utilizing the local press in the discussion of local farm problems, and (8) utilizing the laboratory work of the pupils to promote improvement in the agricultural practices of the community by such work as testing seed corn, testing milk and cream, grafting, seed-purity testing.

Indirect extension would be the result of and grow out of the home project work with pupils. It is evident to the committee that many farmers would be influenced by the project demonstrations carried on at home in connection with classroom instruction.

Incidental extension.—It is reasonable to suppose that a trained agriculturist in any community would have propounded to him many questions in connection with the farmers' problems. These questions, of course, would be of a miscellaneous character and should be classed necessarily as incidental extension.

V. SCHOOL EXHIBITS.[5]

Purpose.—School fairs and exhibits are often held chiefly for the purpose of affording an opportunity for teachers and students to show parents and patrons what the school is doing. Although we may acknowledge that it is essential to arouse interest on the part of patrons and appreciate the value of exhibits in advertising the school, we should not lose sight of the value of such exhibits to the students themselves and to the young people of the community who are of school age.

Agricultural exhibits held in connection with home projects and other practical work of the school should have the following educational values: They should (1) arouse interest in practical agriculture and through it a general interest in the school; (2) establish ideals toward which the students may work; (3) give practice to the students through preparation and arrangement; (4) furnish suitable materials for study and practice in judging; and (5) have a beneficial socializing influence associated with school spirit since they furnish opportunity for cooperation.

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[5] See U. S. Dept. of Agr., States Relations Service Doc. No. 42, "Agricultural Exhibits and Contests."

Types of exhibits.—Although the agricultural exhibit may be made a part of a general school fair, there are many cases in which the agricultural work of the students is such as to merit a special agricultural fair or exhibit. Various forms of agricultural exhibits may be made a part of the school museum and used as permanent teaching equipment. We are considering at this time, however, a temporary exhibit of the work of the students. This exhibit may cover all phases of agriculture, or it may deal with one line of school work or one kind of project. The following are examples of the latter class of exhibits which should be suggestive: (1) A corn show; (2) a poultry show; (3) a colt show; (4) a pig show; (5) potato, vegetable, and fruit exhibits; (6) exhibits of farm mechanics and handicraft work. If the practical work of the school or the home project work follows one or two special lines, it will be better to hold special exhibits of such work rather than attempt general ones.

Organization and plans.—It should be borne in mind that if the school exhibit is to represent the real work of the school and related home activities, it must be planned ahead. This is especially important in the case of farm products. The student should understand when he is planning his project and buying his seed in the spring that he is to make an exhibit of his products in the fall. The contest idea may well involve the whole project as well as the products exhibited. The exhibition of products may be made a requirement of the complete project, and a record of the project may be considered a part of the exhibit.

Early in the fall is the best time for a general exhibit in most parts of the country. This means that arrangements should be made soon after school begins. If there is a live agricultural club, a good part of the responsibility and credit for the work should be turned over to its members. Committees of three members should be appointed for each of the main divisions of the fair, the chairmen of these committees forming an executive board. The teacher may work through these student committees as ex officio chairman. As a means of making it a community affair, an advisory committee of men in the community should be invited to work with the students. These men should be especially helpful in assisting in the securing of premiums. If a permanent advisory committee aids in the supervising of the home projects, it should serve well in connection with the exhibit. One of the most able students should be appointed by the club as secretary of the school fair.

In order that students may know definitely what will be expected and what are the possibilities in their work, it is well to plan the exhibits and contests and secure prizes early in the season. The classification and grouping of exhibits will depend upon the nature and scope of the exhibit.

The exhibits should include, in addition to the products and results of the home work of the student, an exhibition of the agricultural work done at the school. Much of the latter work may be in the nature of practical demonstrations in modern methods. For example, some students may demonstrate the use of the Babcock test, for butter fat; others may show how to apply a simple acidity test for soils, or how to test seed corn; while others are explaining charts which represent agricultural surveys of the school district.

Preparation should be made in advance, so that all will be in readiness the day of the exhibit. The day may very well open with a parade in which the students take parts which have some significance as to their agricultural work. In some cases the parade may take the form of an agricultural or harvest pageant. This may be followed by an agricultural program. Part of the afternoon may be used in agricultural contests, as suggested below.

Contests.—The whole exhibit may represent more or less the contest idea in the products of school and home work. The agricultural contests suggested as a feature of the afternoon program represent training toward skill. They may be classed as group or team contests and contests among individuals. Teamwork should be encouraged because of its value in developing the social idea. Individual contests may be conducted with a view to selecting the winners as members of teams to represent a class or the school. It will be necessary to have junior and senior classes in most of the contests, if there is any great difference in the age and training of the contestants.

The judging contests may be grouped according to the method used, i. e., those involving the use of the score card and those involving the comparative method. The scoring of farm products and animals is better for the junior classes and for individual contests, while the use of the comparative method of placing according to merit is adapted to students who have had practice with score cards.

The following contests may be suggestive of others that will fit local needs and conditions:

1. Judging live stock, horses, cattle, sheep, hogs, poultry, and pet stock.
2. Judging farm products, grains, fruits, potatoes, and other vegetables.
3. Rope tying, 10 to 20 knots and splices.
4. Corn stringing and husking.
5. Fruit packing and boxmaking.
6. Naming of farm and garden seeds.
7. Identification of weeds and weed seeds.
8. Identification of common woods.
9. Riding, driving, and hitching of horses.
10. Killing and dressing of poultry.
11. A plowing match.

Awarding of prizes.—An effort should be made early in the season to secure prizes for the fair, so that the premium list may be published early. If a propaganda is started early and the people see that the school fair represents work which means much in building up the community, it ought not to be difficult to secure premiums. Cash premiums which are out of proportion to the work exhibited should not be given. It will be better to give recognition to a larger number of students. As a rule, it is easier to secure premiums other than cash. For example, in a community interested in poultry it is usually not difficult to get patrons of the school to give pure-bred fowls and settings of eggs as prizes to students for poultry projects and exhibits. Pure-bred pigs make excellent prizes for students in such projects as corn production, as they furnish a start for a new line of work. Books on agriculture and items of equipment are suitable premiums. Whenever there is but little cash it will be advisable to spend it for ribbons and pennants, rather than to lump it into one or two prizes. Larger amounts may be spent to good advantage as scholarships or payments on any college course in agriculture. Attendance at short courses given at the college and visits to fairs and other places of agricultural interest have high educational value if properly planned and supervised, hence are valuable premiums for the projects and exhibits which represent considerable endeavor. Printed certificates may be used also as rewards, and should be given in connection with other premiums.

Rules for contests and standards for judging exhibits will depend upon local conditions. Such rules and standards should be made known to the contestants as early as possible. In most cases it will be best to have competent persons from outside the community to do the judging. The judging should be done as early in the day as possible, and the place won by the exhibit placed on the entry card for the benefit of those visiting the fair. The awarding of the prizes is suggested as the last number on the program as a means of keeping up interest to the last.

VI. USE OF REFERENCE MATERIAL.

1. FORM AND AMOUNT.

Books.—The number of books relating to agriculture is increasing very rapidly. There is need for the instructor in agriculture to use discrimination as to the material he places in the hands of his students. Although most of the books written for students of agriculture are intended primarily for the agricultural colleges, many of them are suitable for reference purposes in secondary schools. The teacher should make a careful selection of books for the school library considering them from the point of view of the student as well as the subject. It is better to have duplicate copies of a few usable books which are needed continually as references in connection with the course of study than to have the shelves of the library filled with complete sets, some volumes of which have no relation to the work of the students.

Bulletins.—Much excellent material for the use of schools is in bulletin form. Some of this material has not yet been organized into the general field covered by agricultural texts. The teacher will find bulletins very useful in making local applications of the general material of the textbook. Discrimination must be used, however, in the use of bulletins. Many of the experiment station bulletins of to-day are of a technical nature not suited to the use of secondary schools. The more general expository bulletins formerly published by the experiment stations are now, as a rule, published by the extension divisions of the agricultural colleges. So much of real value in teaching is now obtainable free of charge or at such a slight cost that there is little excuse for a school not having some kind of an agricultural library.

Periodicals.—Farm journals, like farm books, vary from the cheap general paper to the high-class paper covering a special field. There are one or two general farm papers which have a nation-wide circulation and a number of special live-stock and horticultural journals which should be received by schools teaching agriculture. The school should subscribe for the leading sectional and local farm papers to use in adapting the course of study to local conditions.

The better farm papers are indispensable in keeping both teacher and students abreast with agricultural progress. They are a fruitful source of good illustrations.

2. SOURCES.

The United States Department of Agriculture.—The Federal Department of Agriculture issues a great many publications useful to teachers of agriculture. The Farmers' Bulletins and Yearbooks, the most popular of its publications, may be obtained free through Members of Congress. The department supplies publications free to teachers as long as its supply lasts. From its Division of Agricultural Instruction may be obtained lists of the department publications prepared for the use of teachers. This division also maintains mailing lists of secondary schools teaching agriculture, to which its professional bulletins and other publications pertaining to agricultural instruction are sent.

The United States Department of the Interior: Bureau of Education.—The Federal Bureau of Education issues each year a number of bulletins relating to agricultural education and related subjects; it also issues A Monthly Record of Current Educational Publications.

Superintendent of Documents.—The Superintendent of Documents, Government Printing Office, Washington, D. C., issues price lists of public documents which he has for sale. These documents include those of the Department of Agriculture and the Bureau of Education. The following list gives the numbers of those lists which should be of interest to teachers of agriculture:

11. Foods and Diet.
16. Farmers' Bulletins and Yearbooks.
20. Lands.
31. Education.
38. Animal Industry.
40. Chemistry Bureau.
41. Insects.
42. Experiment Stations Office.
43. Forest Service.
44. Plant Life.
45. Public Roads Office.
46. Soils.
47. Crop Statistics.
48. Weather Bureau.

State agricultural colleges.—The State colleges of agriculture must be depended upon for most of the reference material and direct aid needed to adapt general courses of study and textbooks to local conditions. The publications of the extension divisions and the more popular expository circulars of the experiment stations will be found especially helpful to the students.

Other State institutions.—In some of the States the State universities, where they exist apart from the agricultural colleges, issue publications of interest to teachers of agriculture. Such material is also issued by State departments of education, boards of agriculture, horticulture, etc. Much of this material is in better form for use in secondary schools than experiment publications, yet it is often overlooked. The teacher of agriculture should make himself acquainted with all sources of aid and information in his own State first of all, and then avail himself of the work of other States as far as possible.

Commercial institutions.—Many of the railroads, banks, and manufacturing concerns have departments of agricultural extension which issue publications and furnish illustrative material useful in agricultural instruction. The catalogues of the larger seed companies and nurseries are usually well illustrated, and may be used to advantage in a study of varieties. Likewise, catalogues of implements and farm machinery may be used in connection with farm mechanics. While discretion must be exercised in the use of advertising material, it may often be used to advantage.

Breeders' organizations.—Most of the associations which represent the different breeds of live stock publish circulars of value to the teaching of animal husbandry. They issue descriptive matter, charts, and score cards, which are of special value in a study of types and breeds. Lists of these associations, with the addresses of their secretaries, may be obtained from the Bureau of Animal Industry, United States Department of Agriculture.

3. EFFICIENCY IN USE.

As much of the material suggested may be obtained free of charge, the teacher should not only avail himself of it for the school but should also aim to arouse his students to collect such material as may have value in connection with their study and practice. Students may even be required to obtain such available bulletins as have a direct bearing upon their courses and projects. Lists of bulletins with instructions for obtaining them should be furnished early, so that no time will be lost in waiting for publications. For most reference reading students must depend upon the school library. Much of the best material is in the free publications, but in such a form that it is often overlooked. The teacher should use a card-index system,[6] so that students may find the available information on any topic which may be assigned. Bulletins should be in suitable boxes and arranged on shelves according to the card-index system in use. Covers should be provided for bulletins which are used extensively. If files are not kept of the farm papers and important articles indexed, clippings should be made of such articles as may have a bearing upon subjects covered by the course of study. These clippings may be placed in large envelopes or letter files and indexed under title of subject with the bulletins. In making students acquainted with sources of information and establishing efficient habits in the use of that information much will be accomplished in their training.

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[6] See Federal Board for Vocational Education, Bul. 41, Agric. Series No. 8, entitled "Reference Material for Vocational Agricultural Instruction."

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 36

PRELIMINARY SURVEY OF THE SCHOOLS OF THE DISTRICT OF COLUMBIA

MADE UNDER THE DIRECTION OF

THE UNITED STATES COMMISSIONER
OF EDUCATION

WASHINGTON
GOVERNMENT PRINTING OFFICE
1920

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Jan. 28, 1921

LETTER OF TRANSMITTAL.

Department of the Interior,
Bureau of Education,
Washington, October 16, 1920.

Dear Mr. Secretary: In October, 1919, at the request of the Board of Education in the District of Columbia the Bureau of Education made a preliminary survey of the schools of the District and reported to the board a plan for the reorganization of the administrative and teaching forces of the schools, including a schedule of salaries.

The committee appointed to make the investigation made no attempt to study the finances of the schools, the need for buildings, the courses of study, or schoolroom work. It confined itself wholly to questions of organization, administration, and salaries. The recommendations have in them, I believe, much of value to boards of education and superintendents of schools in other large cities. I am therefore transmitting, in the form of a letter to the president of the Board of Education of the District of Columbia, this report for publication as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. Claxton,
Commissioner.

Hon. John Barton Payne,
Secretary of the Interior,
Washington, D. C.

PRELIMINARY SURVEY OF THE SCHOOLS OF THE DISTRICT OF COLUMBIA.

LETTER OF THE COMMISSIONER TO DR. VAN SCHAICK.

OCTOBER 29, 1919.

Dr. JOHN VAN SCHAICK,
President of the Board of Education
of the District of Columbia.

MY DEAR DR. VAN SCHAICK: In a letter of September 4 you requested, for the Board of Education of the District of Columbia, the assistance of the United States Bureau of Education in making a preliminary survey of the schools of the District, for the purpose of obtaining data for the use of the United States Reclassification Commission in its work of reclassifying the employees of the board of education and for the use of the board itself in its task of preparing plans for the reorganization of the administrative and teaching force of the schools.

In response to this request I detailed a committee of the bureau, consisting of Dr. Frank F. Bunker, Dr. Samuel P. Capen, Dr. Willard S. Small, and Dr. W. Carson Ryan, jr., who gave to this survey as much time as their other duties would permit, and made to me a report in the form of recommendations which I have carefully reviewed and revised, and which in its revised form I am transmitting herewith for such use as your board may care to make of it.

In making this survey the chairman of the board of education, the superintendent of schools, and representatives of the Teachers' Union were interviewed formally. Other persons connected with the school system were interviewed informally, and such records as were thought necessary were examined.

In the very brief time that could be devoted to this task it has been wholly impossible to collect and present all the facts and arguments which, with more time, might have been given in support of the recommendations made, but it is believed a more comprehensive survey will amply justify these recommendations. Such a survey would be necessary to enable this bureau to advise as to many of the important details of reorganization of the schools of the District and to make constructive suggestions for their general improvement.

In the tentative report of the committee submitted to me there are some very interesting recommendations looking toward the larger participation of the teachers of the schools in their management and in the making of the general policies of the school system. But after further consideration it is thought best to withhold all recommendations on this subject at this time. This is a matter of such importance, so far-reaching in its results, and so complex as to require comprehensive study from many different angles. Very little such study, however, has been given to it anywhere. It is my purpose, with the help of such expert assistance as can be had, to undertake such a study through this bureau, and, with your permission, to render you a report with recommendations later.

The brief report herewith submitted is in three parts. Part I contains recommendations for additions to the administrative, supervising, and teaching staffs, and changes in their organization. Part II contains recommendations in regard to classification and salaries. Part III contains suggestions for a more adequate basis for the payment of janitor service. It is fully understood that the adoption of these recommendations will increase quite considerably the cost of the schools of the District and necessitate much larger appropriations for their support; but it is believed that the results will fully justify all the increase in cost. It is quite certain that without some such generous scale of reorganization and support the schools of the District can never be brought to that high degree of excellence and efficiency which should characterize the schools of the capital city of the great democratic Republic which long ago accepted, in theory at least, the doctrine of the importance of the fullest and best possible education of all the people.

It is also quite certain that, with the present organization and scale of salaries, the standards and the work of the schools of the District will inevitably deteriorate.

In submitting these recommendations let me, for myself and the committee, express my appreciation of the assistance given by you and others connected with the school system, and to offer the further assistance of this bureau as it may be desired.

Yours, sincerely,

P. P. Claxton,
Commissioner.

REPORT OF THE SURVEY.

PART I.—ADMINISTRATIVE, SUPERVISING, AND TEACHING STAFFS.

1. *Assistant superintendents.*—For the management of a modern complex public-school system with an enrollment of 60,000 pupils, the superintendent needs much expert administrative assistance of such varying kinds as can hardly be found in any one person. Since the preeminent function of the schools is instruction and training, it is of the highest importance that the superintendent, however great his business ability, shall be relieved of the necessity of giving attention to the details of the business affairs of the school system, and that he shall be free to devote his time and energies to the larger problems of general policy and particularly to the problems of education. Since the value of the returns of the millions of dollars expended and of the time of the children spent in school depends in very large measure on the character and the effectiveness of the administration, it would be very unwise not to make this administration effective at any reasonable cost. It is, therefore, recommended that the number of assistant superintendents in the District be increased from two to six, and that one of these be charged with the management of all the business affairs of the school system. The other assistant superintendents should be selected with special reference to the needs of the following five chief divisions of the work of the superintendent's office:

(1) The management of the elementary schools and the normal school for white persons.

(2) The management of the elementary schools and the normal school for colored persons.

(3) The management of the high schools, vocational schools, extension schools, evening schools, and other special schools and activities for white persons.

(4) The management of the high schools, vocational schools, extension schools, evening schools, and other special schools and activities for colored persons.

(5) The management of all activities pertaining to the care of the health of children in school, including the heating, lighting, ven-

tilation, and cleanliness of school buildings, and other janitorial service, instruction in health, physical training, and attendance.

The direction of the collection, compilation, and interpretation of educational statistics should be assigned either to the assistant superintendent charged with the management of the business affairs of the school system or to the assistant superintendent charged with the management of activities pertaining to health and attendance.

Were it not for the fact that the school system of the District is practically a double one, and that it is found advisable to provide administrative and supervising officers in proportion to the population of the two races, a better and more economic policy in regard to this might be devised.

All assistant superintendents should be elected on the written recommendation of the superintendent of schools and should act under his direction and be responsible to him.

2. *Group principals for elementary schools.*—Unfortunately, there is in the District a very large number of small school buildings, 99 of 8 rooms or less, and 42 others of 12, 14, or 16 rooms. The present policy of providing for each of these small buildings a teaching principal, dividing her time and energies between the work of a regular grade teacher and the duties of principal of the building, is evidently very unsatisfactory, and it is not believed that it can ever be made satisfactory. To provide a managing principal for each of the small schools would be very costly. It is therefore recommended that the schools of the District be combined into approximately 50 groups, the number of schools in each group depending on their size and the proximity of the schools to each other, and that there be assigned to each group a principal who shall be relieved of all duties as a teacher in any school and who may, therefore, devote full time to the important duties of a managing principal. It may be found advisable to assign a group principal to each building having 16 or more rooms. To each of these groups of schools there should be assigned a competent clerk, who, under the direction of the group principal, should transact all business and attend to the compilation of such statistical facts as are required of these schools. Without such relief from clerical duties, it would be impossible for the group principal to perform effectively the important duties of the office.

It is further recommended that, when the policy of providing group principals is adopted, the office of District principal, of which there are now 13, be abolished.

As to salary, group principals should be classified in "Group C," defined later.

3. *Teachers of special subjects in elementary schools.*—Among the teachers of each of the groups of schools to be formed under recom-

mendation 2 there should be one teacher of special ability in each of the following subjects, which a large number of the regular grade teachers have little or no ability to teach: Drawing, music, manual training, domestic science, physical training. These should teach their special subjects in all the grades of all the schools of the group in which the regular grade teachers are unable to teach them satisfactorily, and should give such expert advice and help to other teachers as may be necessary to enable them to do their work in these special subjects more satisfactorily. It will be comparatively easy so to arrange the schedule of recitations in the several schools as to make it possible for grade teachers to be occupied with other classes when the special teachers have charge of the children of their grades. The providing of these expert teachers of special subjects need not, therefore, involve any additional expense to the school system. The slary of a special teacher should be the same as that of other teachers in her class.

4. *Directors and assistant directors of special subjects.*—There are at present in the school system a director and assistant director for each of the following subjects: Music, drawing, physical culture, domestic science, domestic art, kindergartens, and penmanship. Without a more careful and extensive investigation of their work and its relation to the work of the school as a whole, it is impossible to make any recommendation in regard to these except that they be continued, at least, until teachers of special subjects are provided for each of the groups of schools as recommended in paragraph 3.

5. *Substitute teachers.*—The report of the superintendent of schools for the year 1917–18 shows an average absence of 60 teachers a day because of sickness or other reasons. In March, 1918, the average was 80 teachers a day. The average for the year and for the month having the highest number of absences was much higher than for the year 1918–19, but this was due to the epidemic of influenza and other unusual causes. The average for 1917–18 was, however, not above what may be expected in any normal year. The law provides that each teacher in the schools of the District may have two days in each year to visit other schools and observe the methods of other teachers. It is very important for the efficiency of the schools that all teachers avail themselves of this opportunity for seeing the work of other schools and teachers and of gaining new ideas. Should all teachers do this it would add nearly 4,000 absences for the year, or an average of 20 or more absences a day. When teachers are absent classes and grades must be dismissed or the places of these teachers must be filled by substitute teachers. To fill satisfactorily a temporary vacancy caused by the absence of a teacher for one or more days requires unusual skill, both in teaching and discipline. Substitute teachers should therefore be selected from the strongest and best in the system.

The present policy of selecting substitutes is wholly unsatisfactory and is unjust both to the children and to the regular teachers. It is therefore recommended that a group of from 75 to 80 of the most capable and adaptable teachers in the entire school system be selected and held in reserve as substitute teachers, and that all substitutes be drawn from this group from day to day as needed. By arranging for teachers to take their two days allowed by law for visiting other schools at times when fewest teachers are absent for other reasons, practically all the time of the substitute teachers can be used in classroom teaching. When they are not needed as substitutes they can be assigned to help weak and inexperienced teachers by giving model lessons and otherwise.

The salaries of substitute teachers should be the same as salaries of other teachers of their class.

6. *Heads of high-school departments.*—It is recommended that the policy of providing heads of high-school departments for supervision of the important subjects in all the high schools be abolished. There are at present eight such heads of departments in the high schools for white persons and four in the high schools for colored persons.

It is believed that better results can be obtained if the teachers of each subject of each group of closely allied subjects in each school will organize themselves into a body for common counsel, electing for each year a chairman, who shall be the administrative head of the group, and that the necessary coordination of the work in any given subject or any given group of closely allied subjects in the several high schools in the city can be best obtained through a committee made up of the chairmen of the committees on this subject or group of subjects in the several schools. With the counsel and under the direction of the assistant superintendent for high schools, and with the cooperation of the principals of the high schools, these coordinating committees should outline courses of study and determine standards for subjects and groups of subjects which they represent.

The necessary correlation in the work of the high schools and such junior high schools as may be organized can be best obtained through frequent meetings of the coordinating committees from the high schools and similar committees from the junior high schools, acting with the counsel and under the direction of the assistant superintendent having charge of the high schools. A similar coordination of the work of the junior high schools and the elementary schools in respect to subjects and standards can be effected through similar meetings of the coordinating committees of the junior high schools and of similar committees from the elementary schools acting with the counsel and under the direction of the assistant superintendent having charge of high schools and the assistant superintendent having charge of elementary schools and with the cooperation of group principals and special supervisors.

These committees should carry on their work in close cooperation with the members of the several schools. In all matters in which differences of opinion arise the judgment of the principal should prevail, except that an appeal may be made to the assistant superintendent or the assistant superintendents in charge, or, if necessary, to the superintendent of schools.

7. *Principals and assistant principals of high schools.*—It is recommended that new principals and assistant principals of high schools be elected by the board from nominations made by the superintendent. Principals of high schools should be the responsible heads of their respective schools in all matters and should be wholly under the directive authority of the assistant superintendent in charge of high schools and of the superintendent of schools. The policy recommended in regard to principals and assistant principals of high schools should apply to junior high schools, which should be under the direction of the superintendent in charge of high schools. For purposes of salary rating, principals and assistant principals of high schools and junior high schools should be grouped in class C and class D, described later.

One or more competent clerks, as needed, should be assigned to each high school and should work under the direction of the principal of the school, the assistant superintendent in charge of high schools, and the assistant superintendent in charge of the business management of the schools.

PART II.—RECOMMENDATIONS IN REGARD TO CLASSIFICATION AND SALARIES.

It is recommended that for purposes of salary rating all teachers, including nurses, librarians, and attendance officers, and all persons in directive positions, except the superintendent and the assistant superintendents, be classified in five groups: (1) A probationary group; (2) a group called Group A; (3) a group called Group B; (4) a group called Group C; (5) a group called Group D.

1. *Probationary group.*—To the probationary group should be assigned all teachers coming into the department without teaching experience. This group should include two subdivisions: (1) A group of intrants who have, in addition to a four-year high-school course or its equivalent, had a four-year college course or its equivalent and not less than one year of professional training. (2) A group of in-

trants who, in addition to a four-year high-school course, have had a three-year normal-school course or its equivalent. In this group should be placed college graduates who have had no professional training.

The probationary period for teachers in subdivision one should be two years; for teachers in subdivision two, four years.

It is recommended that the salary of teachers in subdivisions (1) be $1,500, and that the salary of teachers in subdivision (2) be $1,200, with a yearly increment of $100 until a maximum of $1,500 is reached.

All teachers in the probationary group should be elected annually upon the recommendation of the committee on personnel.

2. *Group A.*—Teachers in subdivision (1) of the probationary group should be advanced into group A by the personnel committee upon the recommendation of the principal and of the assistant superintendent in charge. Teachers in subdivision (2), before becoming eligible to group A, should have the recommendation of the principal and of the assistant superintendent in charge, and show evidence of having received credit for at least one year of college work above the sophomore class.

Teachers from outside the school system of the District of Columbia, who satisfy the personnel committee that the foregoing qualifications have been met, should be assigned to group A, and their status therein fixed upon the recommendation of the personnel committee, except that all such teachers new to the department should be on probation for one year.

All teachers in the probationary group not eligible for promotion to group A should be dropped or retained in the probationary group upon recommendation of the personnel committee.

It is recommended that the minimum salary for group A be $1,650, and that this salary be increased by yearly increments of $150 for four years until a maximum of $2,250 is reached.

At the end of the four-year period three options in regard to teachers of group A should be open to the board, upon recommendation of the personnel committee: (1) Dismissal; (2) retention at the maximum salary of the group; and (3) promotion to group B.

3. *Group B.*—It is recommended that upon the recommendation of their principal and assistant superintendents, teachers may be promoted to group B, who shall have satisfied the personnel committee—

(1) That in addition to a four-year high-school course, or its equivalent, they have completed a four-year college course, or its equivalent, and have had two years of professional training in a normal school, or in a school or college of education in a university, or the equivalent of such a course;

(2) That study has been continued and unusual success in teaching has been achieved.

It is recommended that the minimum salary of this group be fixed at $2,400, and that this be increased by yearly increments of $150 for six years until the maximum of $3,300 is reached.

It is further recommended that, at the expiration of the six-year period necessary to reach the maximum salary, teachers in this group may, upon the recommendation of the personnel committee, be elected on indefinite tenure at the maximum salary of the group.

4. *Condition of tenure.*—It is recommended that the tenure of the teachers in each of the foregoing groups be conditioned as follows:

That at the end of each school year principals of elementary schools and high schools, directors of special subjects, and assistant superintendents shall file with the personnel committee the names of those teachers under their supervision or direction who are doing unsatisfactory work, and that the names of the persons who are thus reported two years in succession shall be dropped from the list of teachers in the schools of the District.

5. *Group C.*—It is recommended that the minimum salary of persons in this group shall be $3,300, and that this be increased by yearly increments of $150 for six years until the maximum of $4,200 is reached, and that to this group there be assigned the group principals of elementary schools, the principals of atypical schools, vocational schools, and other special subjects; the directors and supervisors of special schools; principals of junior high schools; principals of high schools having an enrollment of less than 1,000 pupils; assistant principals in the larger high schools; and other officers having directive or supervisory duties in connection with the purely educational activities of the school system.

6. *Group D.*—It is recommended that the minimum salary of this group shall be $4,000, and that this be increased by an annual increment of $150 for six years until the maximum of $4,900 is reached, and that to this group there be assigned the principals of normal schools and the principals of high schools having an enrollment of 1,000 pupils or more.

7. *Classification of nurses, librarians, and attendance officers.*—It is recommended that graduate nurses be classified in group B; assistant nurses in group A; librarians in high schools and normal schools in group B; assistant librarians in group A; attendance officers in group B; and assistant attendance officers in group A.

The responsibilities of nurses, librarians, and attendance officers who rightly perform their duties are of equal importance with those of teachers in the schools.

8. *Salaries of superintendent and assistant superintendents.*—It is recommended that the salaries of assistant superintendents of schools be not less than $5,000 and not more than $7,500, and that the salary of the superintendent of schools be not less than $9,000.

PART III.—A SUGGESTION FOR A MORE ADEQUATE BASIS FOR PAYMENT FOR JANITOR SERVICES.

In so far as special requirements in regard to engineers will permit, it is recommended that the plan of determining the salaries of janitors used in the school department of Boston be adopted. According to this plan, compensation is allowed on five items: 1, Cleaning; 2, heating, ventilating, and superintendence; 3, washing of windows; 4, care of yards and sidewalks; 5, care of lawns.

In fixing compensation for cleaning, the cubic content of a building is computed in accordance with the rule of the National Association of School Accounting and Business Officials and indorsed by the American Institute of Architects. Compensation, based on this item, is reckoned at the rate of $0.004 for the first 10,000 cubic feet; $0.0038 for the second 10,000 cubic feet; $0.0036 for the third 10,000 cubic feet; and so on as per schedule up to the total cubic contents of the building.

In fixing compensation for the second item, "Heating, ventilation, and superintendence," the cubic content of the building is also used as a basis, except that buildings are classified into three groups, depending upon the type of heating system used, some requiring more attention and skill than others. For class A buildings the compensation runs $0.005 for the first 10,000 cubic feet, $0.0047 for the next 10,000 cubic feet, and so on with the item of "cleaning." The heating, ventilation, and superintendence of class B and class C buildings are compensated for at a lesser rate.

Compensation for "washing of windows," the third item, shall be on the basis of the total area of the sashes, and at the rate of $0.0055 per square foot for one washing on both sides. Additional washing per year when ordered by the board shall be at the same rate, which also applies to all windows, transoms, doors, and doors in permanent bookcases in the building.

The fourth item: "Care of yards and sidewalks" shall be on the basis of their total area and at the rate of $0.003 per square foot. So also with the item, "Care of lawns," except that the rate allowed is $0.0033 per square foot.

The annual salary of each janitor shall be arrived at by applying the rates of compensation for cleaning, heating, ventilation, and superintendence to the cubic content of the buildings, and by applying the rates of compensation for washing of windows and the care of yards, sidewalks, and lawns to the several areas. The total of the amounts shall constitute the annual compensation for janitor service.

This schedule does not include compensation for evening schools, school centers, vacation schools, playgrounds, and lectures or concerts, for each of which additional compensation is allowed.

A schedule of salaries worked out in accordance with some such plan as this would be much fairer than the usual haphazard method of determining the amount; furthermore, such an analysis of the duties of janitors as the plan entails would make it easy for the board to determine the amount of help which each needs in order properly to care for his building.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 38

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

NOVEMBER, 1920

WASHINGTON
GOVERNMENT PRINTING OFFICE
1920

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CONTENTS.—Proceedings of associations—Educational history and biography—Current educational conditions—Educational theory and practice—Educational psychology; Child study—Educational tests and measurements—Special methods of instruction—Special subjects of curriculum—Kindergarten and primary school—Rural education—Secondary education—Normal training—Teachers' salaries and professional status—Higher education—Research—School administration—School management—Schoolhouses and grounds—School hygiene and sanitation—Physical training—Play and recreation—Social aspects of education—Child welfare—Moral and religious education—Manual and vocational training—Vocational guidance—Agriculture—Home economics—Commercial education—Engineering education—Civic education—Americanization—Education of soldiers—Education of women—Negro education—Education of deaf—Exceptional children—Education extension—Libraries and reading—Bureau of Education: Recent publications.

NOTE.

The record comprises a general survey in bibliographic form of current educational literature, domestic and foreign, received during the monthly period preceding the date of publication of each issue.

This office can not supply the publications listed in this bulletin, other than those expressly designated as publications of the Bureau of Education. Books, pamphlets, and periodicals here mentioned may ordinarily be obtained from their respective publishers, either directly or through a dealer, or, in the case of an association publication, from the secretary of the issuing organization. Many of them are available for consultation in various public and institutional libraries.

Publications intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

PROCEEDINGS OF ASSOCIATIONS.

1724. **New York (State) University. Educational congress, Albany, N. Y., May 19–28, 1919.** [Proceedings] Albany, University of the state of New York, 1920. 90 p. 8°. (University of the state of New York bulletin, no. 702, January 15, 1920)

Contains reports and recommendations of committees on the following subjects: Agricultural education, All-year school, Americanization, Art, Civics, Clearing house, Economics, English, Foreign languages, General science, Geography, Health education, Higher education, History, Home economics, Industrial education, Libraries, Mathematics, Mental diagnosis, Moral instruction, Music, Rural education, and Training of teachers.

1725. **North central association of colleges and secondary schools.** Proceedings of the twenty-fifth annual meeting . . . March 18–20, 1920, Chicago, Ill., Pub. by the Association, 1920. 160, 64A p. 8°. (Harry M. Gage, secretary, Huron College, Huron, S. Dak.)

Contains: 1. F. G. Pickell: Report of the Commission on unit courses and curricula, p. 17–24. 2. P. W. L. Cox: What is scientific management? p. 27–36. 3. K. C. Babcock: Report of the Commission on institutions of higher education, p. 48–58. 4. J. L. McConaughy: The recruiting of teachers for higher institutions, p. 58–65. 5. G. F. Kay: The recruiting of teachers for higher education, p. 65–68. 6. M. A. Brannon: Adequate financing of teaching in higher institutions, p. 69–78. 7. R. M. Hughes: The adequate support of higher education from the standpoint of the state, p. 78–89. 8. Captain Potter: Scholarships for children of officers and enlisted men, p. 93–95. 9. H. C. Morrison: Public school finances, p. 96–103. 10. G. L. Mackintosh: The annual address of the president, p. 103–108. 11. Directory, standards, statistical analysis and list of accredited secondary schools . . . also the special studies: Tentative standards for junior high schools, Effect of size of classes on quality of work, Teaching citizenship in high schools, p. 1A–64A.

1726. **Texas state teachers' association.** Proceedings of the forty-first annual meeting . . . Houston, Texas, November 27–29, 1919. Fort Worth, Texas, 1920. 96 p. 8°. (Texas outlook, vol. 4, no. 7, July–August 1920) (R. T. Ellis, secretary, Fort Worth, Texas)

Contains: 1. David Snedden: The professional improvement of teachers and teaching through organization, p. 10–15. 2. Annie W. Blanton: Co-operation in improving and extending education in the public schools, p. 15–18. 3. Frederick Eby: Report of the committee on educational progress within the state, p. 24–26. 4. Edwin Mims: The new challenge to teachers of America, p. 40–44. 5. W. B. Bizzell: Place of industrial education as training for citizenship, p. 45–48. 6. R. E. Vinson: Educational solidarity, p. 48–51. 7. E. O. Lovett: The place of the privately endowed institution, p. 51–53. 8. D. W. Hume: The thrift campaign in the schools as a training for national emergencies, p. 53–55. 9. F. M. Bralley: Better financial support for our schools, and how to get it, p. 55–58. 10. C. S. Meek: Democracy in supervision, p. 58–61. 11. Lorraine E. Wooster: Present day educational needs, p. 62–68. 12. H. F. Estill: Training teachers for leadership in the new age, p. 76–79. 13. W. S. Small: Physical education through the public schools, p. 79–81. 14. A. T. Bostwick: School libraries and mental training, p. 82–86.

EDUCATIONAL HISTORY AND BIOGRAPHY.

1727. **Lesh, William S.** The proposals relating to the education of youth in Pennsylvania as reflected in Franklin's early life. Home and school guest, 11: 19, 21, 23, 25, April 1920.

1728. **McClusky, Frederick D.** Introduction of grading into the public schools of New England. Elementary school journal, 21: 34–46, 132–45, September, October, 1920.

An historical inquiry based on documents contemporary with the establishment of the graded system.

1729. **Palmer, George Herbert.** William James. Harvard graduates' magazine, 29: 29–34, September 1920.

Tells how William James appeared to his colleagues in the daily course of his work as a Harvard professor.

1730. **Watson, Foster.** Was Shakespeare ever a schoolmaster? Nineteenth century, 88: 643–54, October 1920.

A study based on John Aubrey's statement that Shakespeare, in his younger years, was a schoolmaster in the country. Aubrey was born in 1626, ten years after the great dramatist's death, and died in 1697. He made the reference to Shakespeare in his "Briefe lives."

CURRENT EDUCATIONAL CONDITIONS.

UNITED STATES.

1731. **Erskine, John.** Democracy and ideals, a definition. New York, G. H. Doran company [1920] 152 p. 12°

CONTENTS.—I. Democracy and ideals.—II. American character.—III. French ideals and American.—IV. Society as a university.—V. Universal training for national service.—VI. University leadership.

1732. **Hevia, Aurelio.** General Leonard Wood and public instruction in Cuba. Inter-America, 4: 3–16, October 1920.

Describes the constructive work in education accomplished during General Wood's administration of Cuba, 1899–1902. Work of Dr. E. J. Varona.

1733. **Luckey, G. W. A.** Education, democracy and the league of nations. Boston, Richard G. Badger, The Gorman press [1920] 347 p. 12°.

1734. **Miles, H. E.** Education—minus business brains. National civic federation review, 5: 11, 23, September 23, 1920.

One-half of American children leave schools with no civic and economic understanding. America twenty-four per cent illiterate.

Speech delivered at the National citizens' conference on education, Washington, D. C., May 20, 1920.

1735. **New York (City) Board of education.** Report of the superintendent of schools on the budget estimate for 1921. New York city, Board of education, 1920. 114 p. tables, diagrs. 8°.

A report submitted by the superintendent of schools, William L. Ettinger, in support of the major items of the budget estimate for the year 1921.

1736. **Sears, J. B.** The Boise survey; a concrete study of the administration of a city school system. Yonkers-on-Hudson, N. Y., World book company, 1920. viii, 290 p. diagrs. 12°. (Educational survey series.)

The complete report of the survey of the public school system of Boise, made in 1919 by a survey staff consisting of J. B. Sears, director, assisted by William M. Proctor and J. Harold Williams.

1737. **Tennessee. State department of public instruction.** Better schools campaign. Bulletin on the educational situation in Tennessee. Nashville, Tenn., October, 1920. 12 p. 8°.

1738. **Whittier state school, Whittier, Cal. Research staff.** A survey of pupils in the schools of Bakersfield, California. Whittier, Whittier state school, 1920. 43 p. illus. 8°. (Publications of Whittier state school. Department of research bulletin no. 9, June, 1920.)

Reported by J. Harold Williams.

1739. **Winship, A. E.** [Education] in Montana. Journal of education, 92: 344–46, October 14, 1920.

Educational progress in Montana.

FOREIGN COUNTRIES.

1740. **Cooper, Charlotte L.** Elementary educational problems. Nineteenth century, 88: 720–34, October 1920.

Conditions in England described. Emphasizes the necessity of religious and moral lessons.

1741. **Fletcher, Frank.** The public schools in a national system of education. Journal of education and School world, 52: 665–67, October 1, 1920.

Secondary schools in England and their relation to the national system of education.

1742. **Meneclier, Jorge.** Estudio sobre la población escolar de la república, 1914–1920. Buenos Aires, 1920. 122 p. diagrs. 8° (Consejo nacional de educación.)

1743. **Phoutrides, Aristides E.** Vernacular and revolution: how a return to the language of the people helped to recreate a great democracy. Survey, 45: 8–9, October 2, 1920.

Discusses the educational renaissance in modern Greece.

1744. **Roux, Joseph.** Un examen des recrues en 1920. Revue pédagogique, 77: 199–209, September 1920.

Tabulates and discusses the results of the examination in 1920 of 378 typical recruits for the French army.

1745. **Strudwick, E.** The relations of school to life. Journal of education and School world, 52: 656, 658, 660, October 1, 1920.

Conditions in England described.

EDUCATIONAL THEORY AND PRACTICE.

1746. **Abb, Edmund.** Erziehungskunde. Zweite auflage. Nürnberg, Verlag der Friedr. Kornschen buchhandlung [1920] 190 p. 8°.

1747. **Blair,** *Sir* **Robert.** The science of education. Journal of education and School world, 52: 653–54, 656, October 1, 1920.

Also in School and society, 12: 235–41, September 25, 1920.

Says that education as a science should do something more than mere applied psychology. "It must be built up not out of the speculations of theorists, but by direct, definite *ad hoc* inquiries concentrated upon the problems of the classroom by teachers themselves." Describes the work of child study in the past.

1748. **Butler, Nicholas Murray.** Six tests of an educated man. Columbia alumni news, 12: 28–29, October 8, 1920.

President Butler's address before the students of Columbia college, September 28, 1920. Dr. Butler's six tests of an educated man are (1) Correctness and precision in the use of the mother tongue, (2) Refined and gentle manners, (3) Sound standards of feeling and appreciation, (4) The power and the habit of reflection, (5) The power of growth, and (6) The power to do, efficiency.

1749. **Colby, Elbridge.** Teaching—in the army and out. School and society, 12: 334–37, October 16, 1920.

The effect of the war upon our teaching profession.

1750. **Cousinet, Roger.** L'éducation utilitaire. Revue pédagogique, 77: 157–73, September 1920.

Considers the problem of useful, practical education, and in this connection quotes extensively from John Dewey's School and society.

1751. **Horne, Herman Harrell.** Jesus the master teacher. New York, Association press, 1920. 212 p. front., plates. 12°.

Bibliography: p. 211–212.

1752. **McKeever, William A.** How do your children work? Social progress, 4: 191–93, September 1920.

Says we must exalt common work and common industry to the position where it will become a beautiful discipline for the young. The writer wants suggestions from parents as to how they induce their children to work.

EDUCATIONAL PSYCHOLOGY; CHILD STUDY.

1753. **Freeman, Frank N.** Clinical study as a method in experimental education. Journal of applied psychology, 4: 126–41, June–September 1920.

The purpose of the study is to present some reflections upon "the relationship between group study and individual study as a method of educational investigation."

1754. **Ingalese, Richard.** The history and power of mind. New York, Dodd, Mead and company, 1920. 329 p. 12°.

1755. **Parker, Samuel C.** Problem-solving or practice in thinking. Elementary school journal, 21: 16–25, September 1920.

First of a series of articles on this topic. Divides discussion into four sections: (1) Problems of everyday life; (2) actual lessons illustrating problem-solving in school; (3) how skilled problem-solvers think; (4) rules for training pupils in effective problem-solving.

1756. **Patri, Angelo.** Fear—and the child. Red cross magazine, 16: 7–11, October 1920. illus.

Shows a number of ways in which parents instil fear into the hearts of children and the necessity for killing this fear. Says that fear is the most distressing burden that struggling humanity has to carry.

EDUCATIONAL TESTS AND MEASUREMENTS.

1757. **Beeson, Marvin F.** Educational tests and measurements. Greeley, Colo., State teachers college, 1920. 66 p. 8°. (Colorado state teachers college bulletin, ser. 20, no. 3, June 1920. Research bulletin no. 7)

A brief statement of the nature of the scales, tests and measurements now available for the elementary school subjects, with available references on each test and a general selected bibliography on the tests for each subject.

1758. **Blumenthal, Frances.** Statistical analysis of the results of a prognosis test given to students beginning French and Spanish. Bulletin of high points, 2: 22–26, September 1920.

1759. **Buckingham, B. R.** *and* **Monroe, Walter S.** A testing program for elementary schools. Journal of educational research, 2: 521–32, September 1920.

Discusses the different mental tests. Says that the use of intelligence tests without subject-matter tests is one-sided. "The real truth about a pupil or a class is made evident when to a knowledge of mentality is added a knowledge of achievement."

1760. **Clement, J. A.** Have mental tests passed beyond the popular-cartoon stage in colleges? School and home education, 40: 35–37, October 1920.

The progress in the psychological testing of college students.

1761. **Foster, Josephine C.** Significant responses in certain memory tests. Journal of applied psychology, 4: 142–54, June–September 1920.

Considers the different types of reactions found in the tests of memory. Gives data regarding diagnostic signs of insanity, etc.

1762. **Hudelson, Earl, Stetson, F. L.,** *and* **Woodyard, Ella.** Sixteen spelling scales, standardized in sentences for secondary schools. Teachers college record, 21: 337–91, September 1920.

1763. **Johnson, Willis E.** The formulation of standards of educational achievement for a state. 1920. 77 p. 8°.

Bibliography: p. 66–77.
Submitted in partial fulfillment of the requirements for the degree of doctor of philosophy, University of Minnesota, June 1919.

1764. **Myers Garry C.** Economy in intelligence classification. Educational administration and supervision, 6: 309–12, September 1920.

The army plan of classification by intelligence applied to the public schools, and the savings by such a scheme.

1765. ——— Mental health of school children. Pittsburgh school bulletin, 14: 359–62, October 1920.

The group intelligence test as an aid in classifying the child on the basis of his native capacity.

1766. **Myers, Garry C.** A new democracy in education. American schoolmaster, 13 : 254–58, September 1920.

An equal opportunity for all and the classification of children on the basis of intelligence.

1767. **Newark, N. J. Board of education. Committee on instruction and educational supplies.** Arithmetic survey in the public schools of Newark, N. J. Newark, N. J., Board of education, 1919. 30 p. tables (part. fold.), diagrs. (part. fold.) 8°. (Newark, N. J. Board of education. Monograph no. 3)

1768. **Pintner, Rudolf** *and* **Fitzgerald, Florence.** An educational survey test. Journal of educational psychology, 11 : 207–23, April 1920.

The exercises used in this survey were selected from the standard educational tests and measurements. The survey was made at the Ohio state university.

1769. **Platt, Frank J.** Measuring improvement in language essentials. School review, 28 : 611–14, October 1920.

Discusses an experiment made by the English department of the Oak Park high school, Illinois, to determine what improvements could be made by its pupils with a list of 21 essentials in composition.

1770. **Pressey, Luella W.** Scale of attainment No. 1.—An examination of achievement in the second grade. Journal of educational research, 2 : 572–81, September 1920.

The scale developed consists of four tests, designed to measure abilities in spelling, reading vocabulary, silent reading, and addition and subtraction.

1771. **Rogers, Agnes L.** Mental tests as a means of selecting and classifying college students. Journal of educational psychology, 11 : 181–92, April 1920.

Study based on a series of mental tests applied to a group of 98 seniors and 182 freshmen at Goucher college.

SPECIAL METHODS OF INSTRUCTION.

PROJECT METHOD.

1772. **Alm, O. W.** The project method and educational practice. Techne, 3 : 7–10, June 1920.

Speaks of the clash of the project method with the present educational practice.

1773. **Bigelow, Gertrude I.** Horace Mann studies in primary education. The course of study and the program in the project method. Teachers college record, 21 : 327–36, September 1920.

1774. **Branom, Mendel E.** The problem method of teaching geography. Journal of geography, 19 : 233–42, September 1920.

1775. **Hyde, Marietta.** Projects in literature. English journal, 9 : 401–6, September 1920.

Discusses the project method in the study of literature. The books that the pupils read should be " short-cuts to an experience in worthy living."

1776. **Larkin, Mary J. M.** The project method tested. Kindergarten and first grade, 5 : 271–73, September 1920.

Tells how the project method functioned in a school in Worcester, Mass.

1777. **Lull, H. G.** The project method of learning. [Emporia, Kans., State normal school, 1920] [12] p. 8°.

1. The word project and its function.—2. Method of procedure, and the use of observation and score cards.

1778. **Stewart, Isabel M.** An experiment in the project method of teaching. American journal of nursing, 21: 30–37, October 1920.

A plea for the project method in training schools for nurses.

1779. **Stewart, Rolland M.** The project as a method of teaching. School science and mathematics, 20: 594–601, October 1920.

Says that the project method gives the pupil acquaintance with a new field of activity from which he may gain mental content for (1) general culture, (2) educational guidance, and (3) vocational guidance.

VISUAL INSTRUCTION.

1780. **Balcom, A. G.** What we are doing in the classroom with films now available. Moving picture age, 3: 17–18, October 1920.

Part of an address delivered before the annual convention of the National academy of visual instruction, Madison, Wis., July 1920. The first part of the address was in the September issue of this magazine, pages 14 and 17.

The plan of film service used in the schools of Newark, N. J.

1781. **Toothaker, Charles R.** How the museum can help the teacher in visual instruction. Moving picture age, 3: 13–14, 31, October 1920.

The opportunity of the museum to combine both specimens and pictures in teaching makes a greater impression upon the child than either alone.

Address before the National academy of visual instruction recently held at Madison, Wis.

SPECIAL SUBJECTS OF CURRICULUM.

READING.

1782. **Lyman, R. L.** The teaching of assimilative reading in the junior high school. School review, 28: 600–10, October 1920.

Gives silent-reading objectives for seventh grade.

1783. **Stone, C. R.** Some illustrative silent-reading lessons. Elementary school journal, 21: 26–33, September 1920.

1784. **Theisen, W. W.** Provisions for individual differences in the teaching of reading. Journal of educational research, 2: 560–71, September 1920.

1785. **Woolbert, Charles H.** Effects of various modes of public reading. Journal of applied psychology, 4: 162–85, June–September 1920.

An attempt to bring the problems of oral expression and public reading into the laboratory.

SPELLING.

1786. **Carback, Clarence H.** Can high school freshmen spell? Current education, 24: 559–64, September 1920.

This is the second of two articles dealing with the question of the efficiency of the course of study in spelling. The earlier article described a spelling experiment made with high school boys—this study treats of vocabulary and spelling from the point of view of the high school girl and the course of study—in both cases pupils who had just entered the freshman class.

1787. **Foote, John M.** Spelling. Southern school work, 8: 10–17, September 1920.

Principles and methods of teaching spelling.

LITERATURE.

1788. **Canby, Henry S.** What is "English"? English journal, 9: 367–73, September 1920.

Discusses the power of the "literary spirit" in the teacher.

1789. **Kingsley, Maud E.** Final examination for college preparatory course in history of English literature. Education, 41: 33–36, September 1920.

1790. **Reynolds, George F.** Minimum essentials in literature. Illinois association of teachers of English bulletin, 12:1–6, May 1, 1920.

Suggests as a core around which to plan more elaborate courses, the ability to read understandingly a considerable passage of ordinary prose and familiarity with certain literature embodying fundamental American ideas and ideals.

ENGLISH AND COMPOSITION.

1791. **Bolenius, Emma M.** The teaching of oral English. 3d ed. Philadelphia and London, J. B. Lippincott company [1920] 225 p. illus. 12°.

1792. **Ewalt, Clara C.** Getting out the high school paper. A Cleveland course in news-writing. Cleveland, Ohio, Board of education [1920] 14 p. illus. 12°.

ANCIENT CLASSICS.

1793. **Deferrari, Roy J.** The inductive and direct methods of teaching Latin. Catholic educational review, 12:469–74, October 1920.

Discusses the nature and purpose of each method and the results of their application.

MATHEMATICS.

1794. **Lindquist, Theodore.** Application of business principles in junior high school mathematics. School and society, 12:304–307, October 9, 1920.

SCIENCE.

1795. **Arbuthnot, Ann Criswell.** Elementary embryology for high school girls. Cleveland, Ohio, 1920. 12 p. 12°. (Cleveland, Ohio. Board of education. Bulletin no. 25)

Shows how, in Cleveland, sex is treated in connection with related subjects such as that of elementary science.

1796. **MacArthur, C. G.** The scientific teaching of science. Science, 52: 347–51, October 15, 1920.

Advocates group discussion, based on the problems that have arisen in the laboratory; lectures by visiting scientists on their specialties, etc.

1797. **Mounce, George.** Some tangible results from a course in general science. School science and mathematics, 20:632–36, October 1920.

Describes the course in general science in the La Salle-Peru township high school, Illinois. Says that the students in general science rank best in physics and chemistry.

GEOGRAPHY.

1798. **Cooper, Clyde E.** Status of geography in the normal schools of the middle states. Journal of geography, 19:211–22, September 1920.

Presents a chart showing what is being done in geography in the various institutions studied.

1799. **Davis, William M.** Geography at Cambridge university, England. Journal of geography, 19:207–10, September 1920.

Gives the schedule of studies at Cambridge on which examinations in geography will be held.

SOCIAL SUBJECTS.

1800. **Groves, Ernest R.** A college program for rural sociology. American journal of sociology, 26:187–94, September 1920.

Says that if the progress of rural social science is to prosper as it should, the college teacher constantly must send forward promising candidates for advanced study. Discusses the difficulties of teaching rural sociology.

1801. **Shideler, Ernest H.** A course in modern social problems for the high school. School review, 28: 615–26, October 1920.

Describes some of the reactions of high school pupils to an experimental course in modern social problems which was organized and taught in the University high school, University of Chicago.

1802. The summer school of community leadership. American city, 23: 397–400, October 1920.

Report of sixth annual session at Madison, Wis.

1803. **Webb, L. W.** Students' methods of studying a certain subject—psychology. Journal of educational psychology, 11: 193–206, April 1920.

Study based on data obtained during the academic year 1916–17 at Northwestern university. Good and bad methods of studying elementary psychology described.

MUSIC.

1804. **Birge, Edward B.** A plan for crediting outside study of music under private instruction. School music, 21: 14–17, September 1920.

Paper read at the High school section of the Music supervisors' national conference, May 1920.

1805. **Chamberlain, Mabel.** How to teach school music. School music review (London) 29: 69–72, October 1, 1920.

Continued from September number. Discusses musical ear-training; and affords an opportunity for gauging "the quality of the impressions made by the sounds heard subconsciously by the children."

1806. **Farnsworth, Charles H.** How to study music. Introduction by Prof. Frank M. McMurry. New York, The Macmillan company, 1920. xvii, 294 p. 12°.

1807. **Seashore, Carl E.** A survey of musical talent in the public schools, representing the examination of children of the fifth and eighth grades in the public schools of Des Moines, Iowa, with the author's measures of musical talent. Iowa City, The University, 1920. 36 p. diagrs. 8°. (University of Iowa studies, first series no. 37. November, 1920. Studies in child welfare, vol. I, no. 2)

1808. **Stock, George Chadwick.** The value of class form vocal instruction—some phases of the work. School music, 21: 22–26, September 1920.

Read in Philadelphia, Pa., March 24, 1920, at the Music supervisors' national conference.

DRAWING.

1809. **Pilsworth, Edward S.** Technique of practical drawing; for teachers, students, and professional artists. New York, The Macmillan company, 1920. xiii, 150 p. 12°.

SAFETY.

1810. **Payne, E. George.** Experimental reconstruction of the elementary school curriculum in the Harris teachers college. School and society, 12: 272–76, October 2, 1920.

Teaching accident prevention by introducing it as a part of the instruction in arithmetic, civics, language, reading, etc.

1811. Safeguarding America against fire, vol. 3, nos. 8 and 9, August, September 1920. illus.

Protecting our school children. A special edition printed for the U. S. Department of the interior, Bureau of education.

KINDERGARTEN AND PRIMARY SCHOOL.

1812. **Bradford, Mary D.** The contribution of the kindergarten to the elementary schools. Kindergarten and first grade, 5:312–15, October 1920.

Address given before the International kindergarten union, Topeka, Kans.

1813. **Kelly, F. J.** Problems in the growth of the kindergarten movement. Kindergarten and first grade, 5:309–11, October 1920.

Address, in somewhat abbreviated form, given before the International kindergarten union, Topeka, Kans.

Suggests that the growth of the kindergarten movement might be hastened by eliminating the present break at the age of six, by more scientific studies of the results of kindergarten training, by enlisting the support of non-teaching bodies, and by seeking statutes lowering the legal age for entering school.

1814. **Watkins, Catharine R.** The kindergarten as a profession. Kindergarten and first grade, 5:328–29, October 1920.

Address given before the International kindergarten union, Topeka, Kans.

RURAL EDUCATION.

1815. **Acher, R. A.** Educational salesmanship. Educational issues, 1:52–54, September 1920.

The writer says "The rural educational problem resolves itself mainly into the problem of persuading the people to invest more money in the educational enterprise. . . . When the schools and school people learn to make the kind of appeal to the public that holds its attention, appeals to its imagination, and arouses its sense of justice, they can have what they want."

1816. **Clapp, Frank L., Noland, Alice G.,** *and* **Wheatley, George.** The public schools of Archuleta county, Colorado. A survey. Boulder, Colo., 1920. 21 p. 8°. (University of Colorado bulletin, vol. 20, no. 2, February 1920)

1817. **Indiana. Department of public instruction.** The school as the center of community life; the story of the work of the Summitville school, Summitville, Ind. Issued under the direction of L. N. Hines, state superintendent of public instruction, Indianapolis, Ind. [1920] 31 p. illus. 8°.

1818. **Johnson, Mamie Thomson.** Community ideals and the country life problem. National school digest, 40:52–54, 115–16, 181, 195, 196, September, October, November 1920. illus.

Article I. The country life problem.—Artrcle II. Cause of rural migration.

The purpose of this series of articles is "to give the rural teacher a vision of the possibilities in the line of community betterment and to enable her by means of specific suggestions and detailed lesson plans to conduct a course in community ideals in her school which will have for its purpose the realization of the highest possible plans of American rural citizenship in every rural community in the land."

1819. Making the rural school efficient. A statement of the problem and a solution, the county unit plan. California taxpayers' journal, 4:3–6, September 1920.

The district system of school administration in California, and the advantages of the unit system.

1820. **Massachusetts. Department of education. Division of elementary and secondary education and normal schools.** Consolidation of schools and transportation of pupils at public expense in Massachusetts. Boston, Mass., 1920. 27 p. 8°. (Massachusetts. Department of education. Bulletin, no. 6, whole no. 115, 1920)

1821. **Moffett, Mary Ledger.** A curriculum for the preparation of rural school supervisors. Educational administration and supervision, 6: 313–18, September 1920.

1822. **Tarbell, Ida M.** When Roosevelt was here. The story of his visit to the Berry schools and the speech he made there. Red cross magazine, 16: 15–20, October 1920. illus.

Describes the schools of Rome, Georgia, and gives the speech that Roosevelt made on the occasion of his visit there.

1823. **Winship, A. E.** Educational aims of the third decade of the century. Journal of education, 92: 283–84, September 30, 1920.

The work of the country life directors in the rural and village schools of Cook county, Illinois.

1824. **Wood, Will C.** The crisis in country life. Western journal of education, 26: 1–2, September 1920.

Speaks of conditions of rural schools especially in California. Says that if California is to remain American we must maintain good schools in our rural districts. Calls education the life insurance of the nation.

SECONDARY EDUCATION.

1825. **National association of secondary school principals.** Third yearbook. Pub. by the Association, 1920. 87 p. 8°. (H. V. Church, secretary, Cicero, Ill.)

Contains: 1. W. D. Lewis: Student participators in school organization and government as a training in democracy, p. 1–9. 2. C. D. Kingsley: Certain features in the report on cardinal principles of secondary education, p. 9–14. 3. J. N. Rule: The place of the modern secondary school in a democracy, p. 14–23. 4. H. B. Loomis: What democracy should demand of her high schools, p. 23–27. 5. Report of the committee on social science, p. 28–37. 6. W. A. Wetzel: The vocational try-out in the junior high school, p. 37–43. 7. T. J. McCormack: On the need of a general social science, p. 43–51. 8. T. H. Briggs: Provisions for abilities by means of homogeneous groupings, p. 53–62. 9. S. A. Leonard: The social recitation, p. 63–75. 10. M. R. McDaniel: School morale, p. 75–80.

1826. **Carmichael, H. F.** Varying practices in typical junior high schools. Junior high clearing house, 1: 6–16, June–September 1920.

1827. An open letter to head masters. (By a sub-master.) Outlook, 126: 327–28, October 20, 1920.

Emphasizes the unwise policy of selecting teachers without consulting the faculty of the school.

1828. **Stewart, Joseph S.** The public, private, and denominational secondary schools of Georgia. Pub. by the department of education. Atlanta, Ga., Byrd printing company, state printers, 1920. cover-title, 74 p. diagrs. 8°.

1829. **Thompson, Frank V.** What professional training a high school principal should have. Teachers college record, 21: 319–21, September 1920.

Address given before the secondary education section of the annual Alumni conferences, Teachers college, February 20, 1920.

1830. **Tillinghast, Charles C.** The high school principal. What I should like to have known before I became a high school principal. Teachers college record, 21: 307–18, September 1920.

Address given before the secondary education section of the annual Alumni conferences, Teachers college, February 20, 1920.

NORMAL TRAINING.

1831. **Charters, W. W.** The objectives of teacher-training. Educational administration and supervision, 6: 301–308, September 1920.

Abstract of an address delivered before the Ohio society of college teachers of education, Columbus, April 2, 1920.

1832. **Irion, Theo. W. H.** Legal aspects of state normal school administration. Educational administration and supervision, 6: 319–36, September 1920.

The nature of the laws governing state normal schools in the majority of the states of the Union and suggestions for an adequate law.

1833. ——— Standards for the professional preparation of teachers. American schoolmaster, 13: 258–62, September 1920.

1834. **Judd, Charles H.** The Carnegie survey of normal schools. Elementary school journal, 21: 47–51, September 1920.

A critical review of the Carnegie foundation report on the normal schools of Missouri.

1835. **Mead, A. R.** The ethics of student teaching. Educational administration and supervision, 6: 393–407, October 1920.

The ethical questions involved in the establishment and administration of student-teaching.

1836. **Ronan, Bertha M.** The organization of social life in a small normal school. Educational administration and supervision, 6: 408–16, October 1920.

1837. **Snyder, R. H.** The improvement of teachers in service. Idaho teacher, 2: 54–57, October 1920.

Devices of the superintendent in improving teachers in service.

1838. **Stuart, Hugh.** A practical course in teacher-training for a liberal arts college. Educational administration and supervision, 6: 367–80, October 1920.

The course consists of observation, partial participation and practice teaching, graded in complexity and extending over a period of thirty weeks.

1839. **Winship, A. E.** The educational crisis. Journal of education, 92: 311–12, October 7, 1920.

Criticism of the report made by the Carnegie foundation on the normal schools of Missouri.

TEACHERS' SALARIES AND PROFESSIONAL STATUS.

1840. **Alexander, Carter** *and* **Theisen, W. W.** Campaigns for teachers' salaries. Educational review, 60: 190–204, October 1920.

Says that publicity material for better salaries should not stress cost features until after a strong desire for better teaching has been aroused.

1841. **Chamberlain, Arthur H.** The next step in organization, with special reference to the organization of state teachers' associations. Sierra educational news, 16: 416–23, September 1920.

Presents the reasons for organization, what has been accomplished through organization, how teachers should organize, and why we need reorganization.

1842. ——— The salary situation with remedies. American school board journal, 61: 40–42, October 1920.

State aid, federal aid, publicity, value of teachers' organizations, etc., in the campaign for higher salaries.

1843. **Creech, J. L.** Why do men turn from teaching? Educational administration and supervision, 6: 388–92, October 1920.

A study based upon returns to a questionnaire sent to 100 prominent bankers, lawyers, doctors, and public officials in Kentucky.

1844. **Evenden, E. S.** Essential features of a state salary law. Educational review, 60: 205–15, October 1920.

Says that the framing of a salary law for a state should be done by the State department of education, which, with its coordinating view of the entire state, will see that every section and every interest is properly represented.

1845. **Ferguson, James.** The tenure of teachers, National council on education. Western journal of education, 26: 2–3, September 1920.

The situation in regard to tenure of teachers and suggestions for its improvement.

1846. **Kent, Raymond A.** How may teachers legitimately boost their wages. Techne, 3: 4–6, May 1920.

The writer says that the greatest tool for securing increased salaries and better preparation is the teachers' organization, but that teachers' organizations can not legitimately use the strike method.

1847. **Landsittel, F. C.** Removing the disparity of teachers' pay. Educational review, 60: 179–89, October 1920.

A review based on the N. E. A. bulletin on "Teachers' salaries and schedules," "Ohio school revenue inquiry," and other investigations. Discusses two important phases of the subject: (1) The measure of discrimination involved in the teachers' economic situation, and (2) the reasons, aside from the principle of fairness, for rectifying it.

1848. **National committee for chamber of commerce cooperation with the public schools and the American city bureau.** Know and help your schools. New York [etc.] American city bureau [1920] 66 p. 8°.

An interpretative report of inquiry no. 1 relating to salaries, training, and experience of teachers in the national survey of urban public schools, analyzing the present school situation in order that plans for the future may be made.

1849. **Smith, William.** Advertising to recruit the teaching profession. School and society, 12: 245–48, September 25, 1920.

Address before the Conference on teacher shortage at Boston University school of education.

How advertising can be used to educate the entire people to a proper estimate of the value of education and the importance of the teaching profession.

1850. **Wagner, Charles A.** Teacher training thru service. American school board journal, 61: 26, 95, October 1920.

HIGHER EDUCATION.

1851. **Brannon, Melvin A.** Adequate financing of teaching in higher institutions. School and society, 12: 295–300, October 9, 1920.

The financial problems within the privately endowed colleges and universities.

1852. **Clark, Harry.** Why college students should be interested in courses in education. Journal of education, 92: 255–56, September 23, 1920.

Gives examples of the value of pedagogy to men and women in many professions and trades. Advocates some courses in education for every college student.

1853. Educational record, vol. 1, no. 4, October 1920.

Contains the Report of the annual meeting of the American council on education, the Annual report of the director, and an address by A. F. Woods on "Operation of the Smith-Lever act and its bearing on future educational legislation."

1854. The Friend (Honolulu, Hawaii), vol. 89, no. 9, September 1920. (The University of Hawaii number)

Contains: 1. A. L. Dean: The University of Hawaii, p. 233–34. 2. D. L. Crawford: The University and future citizens of Hawaii, p. 234–35. 3. C. H. Edmondson: Research at the University, p. 235–37. 4. Robert Spencer: Student activities and needs as seen by a member of the junior class, p. 237–39.

1855. **Gillies, Robert C.** A plea for intensive education at Princeton. Princeton alumni weekly, 21: 38–40, 60–61, October 13, 20, 1920.

1856. **Humphreys, J. A.** Requirements for the A. B. degree in representative American universities and colleges. School and society, 12: 318–24, October 9, 1920.

1857. **Lange, Alexis F.** The junior college. Sierra educational news, 16: 483–86, October 1920.

Address given before the High school principals' convention, Asilomar, March 31, 1920.

The junior college, particularly in California.

1858. **Mather, Frank J.,** *jr.* Aims in college education. Unpartizan review, 14: 271–87, October–December 1920.

Says that without being specifically vocational, the European collegiate education meets the needs of the vocation; while our system, in comparison, is "an anarchy."

1859. **Menge, Edward J.** Darwinism, militarism, socialism, and bolshevism in the universities. Education, 41: 73–85, October 1920.

Says that each one of these "isms" is an application of a principle built upon a non-existent biological something, and which "actually denies itself in its own working out." University men are chiefly responsible for propagating them.

1860. **Ringwalt, Ralph Curtis.** College—twenty-five years after. Harvard graduates' magazine, 29: 42–48, September 1920.

The effect of the small college and the large college on personality.

1861. **Stevens, Edwin B.** Cost accounting in universities. Educational review, 60: 226–43, October 1920.

After a general review of the subject presents data from the Universities of Wisconsin and Washington regarding cost per student hour; and yearly cost per major student for each curriculum in 1918–19.

1862. **Thwing, Charles F.** Some notable college presidents. American review of reviews, 62: 409–11, October 1920.

Sketches of Jacob Gould Schurman, Edgar F. Smith, G. Stanley Hall, and Charles W. Dabney. Illustrated.

1863. The yearbook of the universities of the Empire, 1918–1920. Ed. by W. H. Dawson and pub. for the Universities bureau of the British empire. London, G. Bell and sons, ltd., 1920. 503 p. 12°.

RESEARCH.

1864. **Burgess, George K.** Governmental research. Scientific monthly, 11: 341–52, October 1920.

Given at Royal Canadian institute, April 24, 1920.

SCHOOL ADMINISTRATION.

1865. **Bolser, C. M.** Personal appeal in educational advertising. School and society, 12: 277–81, October 2, 1920.

1866. **Ettinger, William L.** Democratized school administration. School and society, 12: 265–72, October 2, 1920.

Address delivered by the Superintendent of schools of New York City at a conference of associate superintendents and district superintendents, directors, assistant directors and inspectors of special branches, September 17, 1920.

Also in School, 32: 55, September 23, 1920.

Speaks of greater latitude for the teacher in school administration, trade unionism in the schools, and the duties of school principals.

1867. **Gardner, Ethel M.** Teacher cooperation in administration. American teacher, 9: 127–28, September 1920.

Address delivered before the National education association at Salt Lake City, July 1920.

Teachers' councils.

1868. **Haig, Robert M.** Available sources of additional support for Pennsylvania schools. Educational review, 60: 216–25, October 1920.

A brief review of the tax system of Pennsylvania. Contends that "the inadequate support for schools is not due to poverty."

1869. **Moehlman, Arthur B.** A standardized budget. American school board journal, 61: 33–35, 95, October 1920.

Gives a standardized form of budget adopted by the schools of Detroit, Michigan.

1870. **Peters, Charles C.** Improvement of facilities for professional training of superintendents. Educational administration and supervision, 6: 337–45, September 1920.

Suggests methods by which school superintendents might be stimulated to professional growth.

1871. Proper relations of helpfulness and cooperation among superintendents. American school board journal, 61: 43–44, October 1920.

Signed: Avis.

The discussion is from the viewpoint of a superintendent of town schools.

1872. **Staples, C. L.** A comprehensive plan for tabulating and interpreting educational statistics. Education, 41: 119–22, October 1920.

SCHOOL MANAGEMENT.

1873. **Bonner, H. R.** Persistence of attendance in city schools. School life, 5: 10–11, October 1, 1920.

Three-fourths of beginners now reach the eighth grade, three-fifths enter high school, and one-fifth reach the fourth high-school year.

1874. **Cummings, J. H.** Supervised study. Idaho teacher, 2: 57–60, October 1920.

1875. **Hughes, W. H.** Standardizing procedure in a combination system of supervised study, varying scope of work, and weighted credit. Journal of educational research, 2: 547–56, September 1920.

A presentation of methods employed in the Riverview union high school, Antioch, Calif., in administering a combination plan which takes into account "the variations of natural capacities and acquired interests, and at the same time accords credit toward graduation in proportion to individual achievement."

1876. **Rugg, L. S.** The duties of the principal of the elementary school. Southern school work, 9: 9–10, September 1920.

1877. **Salisbury, Ethel I.** The construction of a course of study. Educational administration and supervision, 6: 381–87, October 1920.

1878. **Washburne, Carleton W.** The individual system in Winnetka. Elementary school journal, 21: 52–68, September 1920.

Conditions in Winnetka, Ill., described. The system permits the promotion of each individual pupil in each subject whenever he completes the work of his grade in that subject.

1879. **Whitney, Frederick L.** Individual differences for class room teachers. National school digest, 40: 17–20, September 1920.

To be concluded.

Some illustrations of grade and system groups, and of specific abilities of school children.

1880. **Willett, G. W.** Suggestion for meeting individual differences. School review, 28: 576–84, October 1920.

Says that the best opportunities for individual progress come through the three factors of (1) classification according to ability; (2) extended and enriched course of study and curricula; and (3) minimum and maximum courses or requirements in courses.

SCHOOLHOUSES AND GROUNDS.

1881. **Gloucester, Mass. Public schools.** Seventy-second annual report of the public schools of Gloucester, for the year ending December 31, 1919. Gloucester, Press of Gloucester Times co., 1920. 84 p. illus. 8°.

A school building program for Gloucester, Mass., p. 25–41. The work-study-play plan of organization.

1882. **Hussander, A. F.** Recent Chicago schoolhouses. American school board journal, 61: 45–51, 96, October 1920. illus., plans.

SCHOOL HYGIENE AND SANITATION.

1883. **American school hygiene association.** The school child's health. What mothers should and can do about it. 47 p. illus. 8°. (Harry B. Burns, secretary, 1101 Fulton building, Pittsburgh. Pa.)

"This pamphlet has been prepared by the American school hygiene association, with the cooperation of the American Red cross, for the purpose of helping to give the mothers and teachers of America a practical knowledge regarding the diseases and body defects that school children are in large numbers the victims of . . ."

1884. **Collins, Francis A.** Hygiene of the school. American review of reviews, 62: 416–18, October 1920.

Describes the present movement to better health conditions in the public schools. Illustrated.

1885. **Gebhart, John C.** Relation of school and special feeding to defective nutrition. American journal of public health, 10: 669–72, August 1920.

Writer contends that school meals are merely palliative if unaccompanied by measures to raise permanently home standards of food and hygiene.

1886. **Holt, L. Emmett.** The Child health organization. Modern medicine, 2: 584–89, September 1920. illus.

Health instruction in the schools and methods of arousing interest.

1887. **Johnson, A. Le Roy.** Orthodontic education. Dental cosmos, 62: 1186–94, October 1920.

1888. **Sundwall, John.** Health activities in colleges and universities; a discussion of the aims, organization, activities, and problems of a students' health service. Washington, Government printing office, 1920. 32 p. 8°. (Reprint no. 569 from the Public health reports, November 7, 1919)

PHYSICAL TRAINING.

1889. **Thaler, William H.** The evolution of physical training as a factor in health and education; with special reference to swimming. Mind and body, 27: 211–17, September–October 1920.

Address delivered before a meeting of physical directors at St. Louis, Mo., March 20, 1920.

1890. **Weston, Marion D.** Physical tests. School science and mathematics, 20: 577–93, October 1920.

Study based on data obtained from a survey of grades 1–8 in a Rhode Island school during the year 1919. Five tests were given: height, weight, lung capacity, and strength of the grip of right and left hands.

PLAY AND RECREATION.

1891. **Cummins, Robert A.** Shall play be directed, supervised, or left free? Southern school work, 9: 27–29, September 1920.

"All play activities of children should be first directed, then supervised, and left free to the children themselves only when the formation of approved habits of play is assured."

1892. **Koch, Frederick Henry** *and* **Lay, Elizabeth A.** Plays for amateurs. Chapel Hill, N. C., 1920. 67 p. 8°. (University of North Carolina record, no. 172, January 1920. Extension series no. 36)

A selected list of plays for amateurs.

1893. **Mackay, Constance D'Arcy.** Organizing the rural community theatre. Playground, 14: 417–29, October 1920.

Part VII in a series of articles on Rural imaginative recreation.

SOCIAL ASPECTS OF EDUCATION.

1894. **Cummins, Robert A.** A completely socialized school. American journal of sociology, 26: 195–206, September 1920.

Writer says that the curriculum should be socialized; this means to suit it to the present and future needs of the pupils. The pupils should also gain a reasonable amount of useful information in the fields of history, literature, and science. In summing up, the writer defines a completely socialized school as one in which the school board, the teachers, the curriculum, and the superintendent have "all been laid upon the altar of child welfare and dedicated to their needs."

1895. **Marquette, Bleecker.** What educational methods can do in housing. American city, 23: 375–78, October 1920.

Work of the Better housing league of Cincinnati, Ohio. Work among school children, etc.

1896. **Montyne, Edwin Y.** The socialized recitation. Journal of education, 92: 340–42, October 14, 1920.

The purposes, limitations, etc., of the socialized recitation.

CHILD WELFARE.

1897. **National child labor committee.** Report and papers of the fifteenth National conference on child labor, New Orleans, La., April 1920. American child, 2: 113–54, August 1920.

Contains: 1. W. H. Swift: A new-old method of approach, p. 115–18. 2. R. G. Fuller: The psychological approach to the child labor problem, p. 119–27. 3. Mabel B. Ellis: The juvenile court and child labor, p. 128–38. 4. Gertrude Folks: The rural child and compulsory school attendance, p. 139–44. 5. H. H. Mitchell: What is health protection for working children, p. 145–50. 6. Felix Adler: The next step to be taken by the National child labor committee, p. 151–54.

1898. **American Red cross, Washington, D. C.** Annotated subject index and order list of books and pamphlets, including government reports, on maternity and child welfare in England and Scotland. Washington, D. C., American Red cross, 1920. 181 p. 8°.

1899. **Bowen, Louise De Koven.** Safeguards for town and city youth. Social progress, 4: 194–95, 221–22, September, October 1920.

Speaks of our failure to conserve the health and morals of our children.

1900. **Brown, Sanger.** Social and medical aspects of childhood delinquency. Journal of the American medical association, 75: 987–90, October 9, 1920.

Study of the records of the Children's court of New York city during the last three years. Advocates replacing of truant schools, protectoratees and similar partly custodial agencies with special classes in schools, or special schools with vocational classes.

1901. **Hastings, Montana.** The organization of the state child welfare work, Santa Fe, State department of education, 1920. 32 p. 8°. (New Mexico. State board of education. Bulletin, vol. 6, no. 3, September 1920. New Mexico child welfare service. Bulletin no. 1)

1902. **Huling, Caroline Alden.** Children in industry. Child labor a menace to the prosperity of the people. Social progress, 4: 188–90, September 1920. illus.

MORAL AND RELIGIOUS EDUCATION.

1903. **Burns, James.** A constructive policy for Catholic higher education. Catholic educational review, 18: 458–68, October 1920.

Paper read at the annual meeting of the Catholic educational association, held in New York, June 1920.

1904. **Gee, Howard James.** Methods of church school administration. New York, London [etc.] Fleming H. Revell company [1920] 117 p. 12°.

A textbook for community training schools and international and state schools of Sunday school methods.

1905. **Hall, G. Stanley.** Morale, the supreme standard of life and conduct. New York, London, D. Appleton and company, 1920. 377 [1] p. 12°.

Bibliography: p. 373–[377]

1906. **Meyer, Henry H.** Present tendencies in religious education. Religious education, 15: 201–11, August 1930.

A survey of progress presented at the convention of the Religious education association, Pittsburgh, March 20, 1920.

MANUAL AND VOCATIONAL TRAINING.

1907. **Eastern arts association.** Proceedings eleventh annual meeting, Boston, Mass., April 1–3, 1920. 214 p. pl. 8°. (M. W. Haynes, secretary, Bayonne, N. J.)

Contains: 1. Payson Smith: Address of welcome, p. 8–14. 2. R. O. Small: Vocational education, p. 15–23. 3. Mabel J. Chase: The responsibility of normal schools in training teachers of drawing from the supervisor's standpoint, p. 26–30. 4. A. L. Barbour: Responsibility of the normal school in training teachers of drawing in relation to general education, p. 31–38. 5. Loretta J. Curran: What the manual arts and practical arts teachers can do for general education today, p. 39–41. 6. W. H. D. Meier: The science and art of school and home gardening, p. 45–48. 7. Breta W. Childs: Training teachers for school supervised home gardens, p. 49–52. 8. G. A. Burridge: Training vocational teachers in Massachusetts, p. 53–59. 9. L. S. Burnell:

Systematized printing instruction, p. 74–79. 10. Josef Sandberg: The proper training of manual arts teachers, p. 80–83. 11. A. C. Parker: The problems of an interior decorator, p. 84–88. 12. Lucy H. Gillett: How can our work in foods be made more vital to the health of the child? p. 94–104. 13. O. H. Benson: Backing up the million dollar appetites by a work program of achievement, p. 105–15. 14. R. W. Stimson: Uniting home and school with productive projects, p. 116–18. 15. O. D. Evans: Vocational guidance in the continuation school—"Helping the boy and girl to find themselves," p. 119–27. 16. O. D. Evans: The young worker and the continuation school, p. 128–33. 17. Annie F. Slattery: The class in occupations as a correlative to work in the arts, p. 134–43. 18. C. D. Kingsley: The place of practical education in the modern high school, p. 144–52. 19. Clipston Sturgis: Art in education, p. 153–58. 20. C. R. Richards: The industrial art survey: its purpose and scope, p. 159–62. 21 D. L. Hoopingarner: Social education and the labor problem, p. 168–74. 22. F. V. Thompson: Democratization of school administration, p. 175–76.

1908. **Anderson, L. F.** Beginnings in industrial education. Industrial education in ideal commonwealths. School and society, 12: 370–72, October 23, 1920.

1909. **Bennett, Charles A.** The vocational schools of Buffalo. Manual training magazine, 22: 91–94, October 1920. illus.

The all-day vocational school in Buffalo, N. Y.

1910. **Brower, Lyle.** Art for service. Techne, 3: 6–11, May 1920.

Says the study and teaching of art should be a source of enjoyment if it is to realize its mission and be of service. Gives some suggestions for teaching art for service.

1911. **Chapin, Roy B.** Cooperation between education and industry from the viewpoint of the manufacturer. 11 p. 8°.

Reprinted from the Proceedings of the Society for the promotion of engineering education, 1920.

1912. **Holmes, Chester W.** Vocational aims of selected students. Pittsburgh school bulletin, 14: 343–49, 373, 375–77, 379–84, October 1920.

The Carnegie hero fund commission and the students selected for the benefactions.

1913. **Lockridge, Ross F.** An educational opportunity in industry. Educational issues, 1: 157–59, September 1920.

The part-time continuation school conducted in connection with the Wayne Knitting Mills, Fort Wayne, Ind.

1914. **Lyon, Leverett S.** Medieval English apprenticeship as business education. School review, 28: 585–99, October 1920.

Medieval apprenticeship was "an institution relied upon to give candidates for membership in the guilds the ability to conduct a business in a difficult economic and social environment." An historical study.

1915. **Morris, J. V. L.** Programs of apprenticeship and special training in representative corporations. American machinist, 53: 565–68, 657–59, 765–66, 847–52, September 23, October 7, 21, November 4, 1920. illus.

A series of articles in which apprenticeship, as it exists today, will be comprehensively treated. The methods used in different representative machine concerns of various sizes will be presented and discussed. The first article deals with the Schenectady plant of the General Electric Company, the second with the apprenticeship system used by R. Hoe and Company of New York city, the third with the Mergenthaler Linotype Company, of Brooklyn, N. Y., and the fourth with the Westinghouse Electric and Manufacturing Company, of East Pittsburgh, Pa.

1916. **Preston, A. W.** A new method of educational work shop management. Manual training magazine, 22: 95–103, October 1920. illus.

1917. **Rickcord, R. V.** Training for the supervisor's job in industry. Industrial arts magazine, 9: 421–28, November 1920.

1918. **Ritter, Richard H.** Industrial education in Korea. North American review, 212: 524–30, October 1920.

Says that outside of the Japanese enterprises, the only industrial training in Korea is that offered by the missionaries, who are mostly American. This training, however, is meagre. There are at present 74 agricultural colleges, 8 commercial schools, 4 technical schools, and 1 fishery school founded and supported by the Japanese government.

1919. **Sowers, J. I.** Value of the part-time school. Educator-journal, 21: 9–11, September 1920.

1920. **U. S. Federal board for vocational education.** Bibliography of employment management. June 1920. Washington, Federal board for vocational education, 1920. 119 p. 8°. (Bulletin no. 51, Employment management series no. 9)

Section IV, Training, including Rehabilitation and Americanization, p. 39–46.

1921. **Wisconsin state federation of labor.** Instruction in Wisconsin schools. Report of the general executive board to the twenty-eighth annual convention . . . La Crosse, Wis., July 21–24, 1920. Milwaukee, Wis., Pub. by direction of the General executive board, 1920. 28 p. 8°.

VOCATIONAL GUIDANCE.

1922. **Andrews, Hazel M.** Vocational and moral guidance through dramatics. Education, 41: 123–31, October 1920.

1923. **Baxter, Mildred F.** Opportunities for college graduates in psychological examining in social service work and education. Journal of applied psychology, 4: 207–18, June–September 1920.

Discusses the need for psychological selection of personnel and psychological direction of welfare work.

1924. **Marcus, Lawrence.** Vocational selection for specialized tasks. Journal of applied psychology, 4: 186–201, June–September 1920.

A study of selective tests for Hollerith machine operatives.

1925. **Proctor, W. M.** The use of psychological tests in the vocational guidance of high school pupils. Journal of educational research, 2: 533–46, September 1920.

Says that such tests are chiefly useful in a negative way, that is, as "a means of discovering to the counselor the kinds of occupations that a given high school pupil would probably better avoid."

AGRICULTURE.

1926. **Crandall, W. G.,** *and* **Barnett, Albert.** The agricultural teacher's annual plan of work. Clemson College, S. C., Clemson agricultural college, 1920. 91 p. 8°. (Clemson agricultural college, Clemson College, S. C. Bulletin 3)

Summarizes briefly some of the plans for teaching agriculture that have been developed in South Carolina during the past three years.

1927. **Struck, F. Theodore.** Farm shop work in Pennsylvania; a study of repair and construction work as carried on by farmers, and as practiced in the vocational agricultural schools of Pennsylvania. [State College, Pa.] The Pennsylvania state college [1920] 85 p. diagrs. 8°. (*On cover:* The Pennsylvania state college. School of agriculture. Rural life department. Special bulletin no. 1. May, 1920)

HOME ECONOMICS.

1928. **Gillett, Lucy H.** How can our work in foods be made more vital to the health of the child. Journal of home economics, 12:385–96, September 1920.

Read before the annual meeting of the Eastern arts association, April 1920. Suggestions for making the work in homo economics practical.

1929. **Van Duzer, Adelaide Laura.** A garment-making project for sixth-grade girls. Cleveland, Ohio, 1920. 8 p. illus. 12°. (Cleveland, Ohio. Board of education. Bulletin, no. 24)

COMMERCIAL EDUCATION.

1930. **Brown, Elmer Ellsworth.** New York university. Graduate schools of business administration. Opening address . . . September 28, 1920. 14 p. 8°.

1931. **Gruenberg, Benjamin C.** Commercial education. School and society, 12:300–304, October 9, 1920.

1932. **Otto, William N.** Practical pointers on teaching commercial English in high school. Clearing house (Goodyear-Marshall publishing company, Cedar Rapids, Iowa) August 1920, p. 1, 4–5.

1933. The Prince alumnae news, no. 5, October 1920. 48 p.

Published by the Prince school of education and store service, Boston, Mass. Contains a number of short articles on education for store service.

1934. **United States. Federal board for vocational education.** Survey of junior commercial occupations. Washington, Government printing office, 1920. 77 p. 8°. (Bulletin no. 54, Commercial education series no. 4)

ENGINEERING EDUCATION.

1935. **Greene, Arthur M.,** *jr.* Cooperation between the preparatory schools, the engineering colleges, and industries as viewed from the standpoint of the educator. Engineering education, 11:5–17, September 1920.

1936. **Hughes, H. J.** The Harvard engineering school. Harvard graduates' magazine, 29:71–73, September 1920.

CIVIC EDUCATION.

1937. **National Catholic war council. Committee on special war activities.** Civics catechism on the rights and duties of American citizens. Washington, D. C., National Catholic war council, 1920. 71 p. 12°. (Reconstruction pamphlets, no. 13, August 1920)

Questions and answers based upon the text of the fundamentals of citizenship (Reconstruction pamphlet no. 6)

1938. [The teaching of political parties and the presidential campaign] Historical outlook, 11:272–80, October 1920.

Contains: 1. H. C. Hill: Political parties and the presidential campaign, p. 272–76. 2. J. M. Gathany: The political campaign in high-school classes, p. 276–78. 3. W. H. Allen: A plea for campaign civics, p. 279–80.

The first article presents a topical outline for the teaching of political parties and the presidential campaign.

AMERICANIZATION.

1939. **Burns. Allen T.** The immigrant. Survey, 45:10–11, 29, October 2, 1920.

Discusses the laws in various states regarding the compulsory use of English as the medium of instruction in immigrant schools. An inquiry into the best methods of Americanization. Gives a bibliography of Americanization studies.

1940. **Gray, Robert Floyd.** The home teacher in California. School and society, 12:330–34, October 16, 1920.

The work of the home teacher in Americanizing the foreign women of California.

1941. **Quimby, George.** Record of progress in immigrant education. Industry (Boston, Mass.) 6:9–12, October 9, 1920.

Facts and figures showing what industries have done in two years—prospects for the future of work under supervision of school authorities.

1942. **Service citizens of Delaware.** Americanization in Delaware, 1919–1920. [Newark, Del., 1920] 87 p. illus. 8°. (Bulletin of the Service citizens of Delaware, vol. 1, no. 8, September 1920)

Prepared by Helen Hart, executive secretary of the Delaware Americanization committee.

CONTENTS.—Pt. I. Formulating the program.—Pt. II. Clinching the night school experiment.—Pt. III. Outside the schools.—Pt. IV. Plans for the future.—Appendix.

1943. **Thompson, Frank V.** Schooling of the immigrant. New York and London, Harper & brothers, 1920. 408 p. 12°.

A report on the methods of the agencies actually at work in the field of Americanization. "This is the first of 11 studies of Americanization which aim to establish a common viewpoint between the native and immigrant populations in the interest of national unity."

EDUCATION OF SOLDIERS.

1944. **McMurtrie, Douglas C.** The essentials of a national system for rehabilitation of disabled service men of the American forces. Greenwich, Conn., The Arbor press, 1920. 23 p. 16°.

A statement presented to the Committee on education of the House of Representatives, March 31, 1920.

1945. **Myers, Garry C.** Some pioneer problems worked out with illiterates. Education, 41:29–32, September 1920.

Says that one remarkable thing about adult illiterates is the speed with which they learn to read and write. Describes methods used in school for illiterate soldiers at Camp Upton, N. Y.

1946. **Segsworth, Walter E.** Retraining Canada's disabled soldiers. Ottawa, J. de Labroquerie Taché, printer to the king's most excellent majesty, 1920. 193 p. plates. 8°.

EDUCATION OF WOMEN.

1947. **McVea, Emilie W.** The present curricula of colleges for women. School and society, 12:241–45, September 25, 1920.

1948. **Ward, Florence E.** The farm woman's problems. Journal of home economics, 12:437–57, October 1920.

Presented at the thirteenth annual meeting of the American home economics association, Colorado Springs, June 1920.

Gives some facts brought out by a recent farm home survey conducted by the Department of Agriculture.

NEGRO EDUCATION.

1949. **Grose, Howard B.** A glad day at Spelman seminary. Missions, 10: 338–59, May 1920. illus.

Pages 344–59 are devoted entirely to pictures showing the work that is being done in educating the negroes at Spelman seminary, Atlanta, Ga.

1950. **Jones, Thomas Jesse.** Educational adaptations. Report of ten years' work of the Phelps-Stokes fund, 1910–1920. New York, Phelps-Stokes fund, 1920. 92 p. 8°.

EDUCATION OF DEAF.

1951. **Jones, Mabel K.** Language development for primary grades. Volta review, 22: 597–603, October 1920.

Gives also a teacher's outline of work, September to June.

1952. **Kinzie, Cora E.** The Kinzie method of speech-reading. Volta review, 22: 609–20, October 1920.

A method developed from a combination of the principles of the Müller-Walle and Nitchie methods.

1953. **Nitchie, Elizabeth H.** The Nitchie method of teaching lip-reading. Volta review, 22: 621–29, October 1920.

EXCEPTIONAL CHILDREN.

1954. **Kohs, S. C.** The school as an agency in preventing social liabilities. School and society, 12: 325–30, October 16, 1920.

Paper read before the annual Conference of the Oregon social workers association, Portland, Oregon, June 29, 1920.

The exceptional child, what is being done for him now in this country and what should be done in order honestly and faithfully to carry out the principles of education in a democracy.

1955. **Wallace, George S.** The feeble-minded as a public school problem. Educational review (Fredericton, N. B.) 35: 66–70, October 1920.

EDUCATION EXTENSION.

1956. **Landgraf, George E.** Free correspondence study courses for ex-service men and women under the Educational bonus law. Madison, Wis., State board of education, 1920. 11 p. 8°. (Wisconsin educational horizon, vol. 3, no. 1, pt. 3, September 1920. Educational bonus bulletin no. 2)

1957. **Payne, Arthur Frank.** Organization of evening vocational classes. American school board journal, 61: 27–29, October 1920.

Some problems involved in the administration of evening vocational schools.

1958. **Smith, Homer J.** Part-time teaching. The teacher, the co-ordinator, teacher training. National school digest, 40: 7–9, 84–86, 159–61, September, October, November 1920.

1959. **Starkweather, J. A.** The organization of night schools, including reports, records and directions for organization. American school board journal, 61: 29–32, October 1920.

The plan given here is the outgrowth of experience in the city of Duluth, Minnesota.

LIBRARIES AND READING.

1960. **Hutchins, Margaret.** Guide to the use of libraries. A manual for students in the University of Illinois; by Margaret Hutchins, Alice S. Johnson, Margaret S. Williams. Urbana, Ill., 1920. 179 p. 8°.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

1961. Administration and supervision of village schools; by W. S. Deffenbaugh and J. C. Muerman. Washington, 1920. 63 p. (Bulletin, 1919, no. 86)

1962. Development of agricultural instruction in secondary schools; by H. P. Barrows. Washington, 1920. 108 p. (Bulletin, 1919, no. 85)

1963. The eyesight of school children. Defective vision as related to school environment, and methods of prevention and correction; by J. H. Berkowitz. Washington, 1920. 128 p. illus. (Bulletin, 1919, no. 65)

1964. Health training for teachers; by Robert G. Leavitt. Washington, 1920. 15 p. (Health education no. 8)

1965. List of references on educational surveys. Washington, 1920. 16 p. (Library leaflet no. 12, October 1920)

1966. Monthly record of current educational publications. Index, February, 1919–January, 1920. Washington, 1920. 32 p. (Bulletin, 1920, no. 28)

1967. Progress in preparation of industrial teachers; by William T. Bawden. Washington, 1920. 28 p. (Industrial education circular no. 5, July 1920)

1968. Reading course for parents (revised). Washington, 1920. 4 p. (Reading course no. 3, revised)

1969. Report of progress of the subcommittee on college instruction in agriculture. Washington, 1920. 11 p. (Higher education circular no. 21, July 1920)

1970. Salaries in universities and colleges in 1920. Washington, 1920. 43 p. (Bulletin, 1920, no. 20)

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 39

FACILITIES FOR FOREIGN STUDENTS IN AMERICAN COLLEGES AND UNIVERSITIES

By SAMUEL PAUL CAPEN
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BUREAU OF EDUCATION

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, November 2, 1920.

SIR: It is of special importance that students in foreign countries who may be seeking educational opportunities in the United States should have accurate information as to what institutions in this country have to offer. For this reason I requested Dr. Samuel Paul Capen, at that time specialist in higher education in the Bureau of Education, to prepare for publication a document which should show the organization of American education with special reference to universities, colleges, and professional schools; state and explain admission requirements with special reference to the needs of foreign students; and outline the general and specific opportunities to be found at American institutions of higher education. The manuscript transmitted herewith gives information on these points and on many others of value, not only to the prospective student from foreign countries, but to all who may be interested in the present facilities for higher education in the United States. I recommend that it be published as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

OPPORTUNITIES FOR FOREIGN STUDENTS AT COLLEGES AND UNIVERSITIES IN THE UNITED STATES.

SECTION I.

CHAPTER I.

ORGANIZATION OF EDUCATION IN THE UNITED STATES.

STATE SYSTEMS.

The United States is a federation of 48 self-governing Commonwealths, each of which exercises independently all powers not specifically conferred upon the Federal Congress by the Constitution or derived by implication therefrom. Since the Constitution does not provide for the control of education by the Federal Government, there is no national system; but the United States contains within its area 49[1] separate systems of education.

No two of the State systems are exactly similar, yet they possess certain common factors. For example, all States provide by law[2] for elementary education[3] at public expense. The usual length of the public elementary school course is eight years. Children commonly enter at the age of 6 or 7 and finish at the age of 14 or 15. In all States, school attendance during a part or all of this period is compulsory.[4] Public secondary schools, called high schools,[5] offering a course generally four years in length, are also maintained in every State. The high-school course[6] is based on the elementary school course and is open to graduates of elementary schools or others of equivalent preparation.

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[1] Including the District of Columbia, which is the seat of the Federal Government.

[2] The raising of the necessary money by taxation for the support of the schools and the administration of them are generally left to local communities—counties, towns, or districts. But local funds are often supplemented by State funds.

[3] For a statement of the scope and content of elementary education, see Sec. III, p. 105.

[4] The age of compulsory attendance is generally from 7 or 8 to 14 or 15. A few States require attendance up to 16 years.

[5] Not to be confused with the German Hochschule, an institution of university grade. The high school corresponds more nearly with the middle portion of the course in a German Gymnasium or Oberrealschule.

[6] For typical high-school curricula, see Sec. III, p. 106, and following.

The high school serves three main purposes. To the great mass of students who frequent it it offers four years of cultural and informational study designed to equip them for more intelligent and resourceful lives as citizens of a democracy. Its second purpose is to prepare students for various higher institutions. In the third place, a number of specialized public high schools fit young people for wage earning in trades and industries. In general, it may be said that the high school has tended more and more to adapt itself to the needs of the local community by introducing studies of a practical and vocational nature and by allowing its students increasing latitude in the choice of courses to be pursued.

Most States maintain normal schools for the training of teachers, or a more or less well-developed State university, or both. The normal schools and certain departments of the State universities articulate with the public high school in ways later to be described.

Alongside the public institutions various groups and individuals have founded elementary schools, high schools, academies,[7] normal schools, and colleges. The most extensive system of private schools is that under the control of the Roman Catholic Church. The total enrollment of the Catholic parochial schools was 1,633,599 in 1919. Other religious sects have also established institutions to provide education under denominational auspices. Both the religious schools and the private schools under denominational control parallel rather closely the amount and character of the training afforded by the public institutions of the same grade. These nonpublic institutions and systems are allowed perfect freedom of development under the laws of the country.

The foreign observer, noting chiefly the dissimilarities of the State systems, is at first inclined to think that a hopeless confusion of standards and organization must characterize American education. But the differences are after all superficial rather than fundamental. The same general types of institutions are to be found in every State, whether they all belong officially to the State system or not. Their interrelations are also essentially the same. There are still certain inequalities of educational standards, especially among higher institutions; but these are not so great nor so widespread as is often believed.

STANDARDS.

The principal reasons for the variation in the standards of higher education are perhaps already apparent, yet they should be briefly summarized because of their bearing on the whole plan and method of American education. The State educational systems have grown up independently of one another. If one takes account of the provisions for education made by a few of the colonial governments before the founding of the United States, the dates of establishment of the 49 systems of education have covered a period of something like two centuries and a half. In that time the social philosophy of the Nation has changed. The common conception of the part the State should play in fostering and controlling education has changed with it. According to a widely prevailing theory[8] all grades of education, from the kindergarten to the university, should be supported and managed by the State or local government. In the relatively newer States of the West and Middle West this condition is realized. Higher and secondary institutions not under public control are either rare or nonexistent. The educational policy of the older States, on the other hand, had crystallized before the general acceptance of this theory. Here the responsibility for providing elementary and a certain amount of secondary education is felt to rest properly on the State, but higher education is left, for the most part, to independent institutions founded under various auspices, principally religious, and subject to little or no public supervision.

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[7] The term "academy" is generally applied to a school of secondary grade.

Inevitable differences of standards sprang from these differences in methods of control. Moreover, a few of the States, particularly those of more recent origin and of sparse population and those impoverished by the Civil War of 1860–1865, have thus far found difficulty in providing adequate equipment for thorough university education and in enforcing the most severe scholastic requirements. In this latter group of States, also, the development of universities and colleges of the highest grade has been still further retarded by the inferiority of the lower schools which prepare students for advanced education.

There are, however, several counter influences at work tending to reduce these inequalities. Chief among them is the action of numerous national and sectional associations of school and university officers. For a number of years these associations have been engaged in defining standards of school and professional training and determining the appropriate scholastic requirements for degrees. In the sections of the country where education is best organized the recommendations of these associations are regarded as authoritative and are put into operation as speedily as possible. The educationally less favored sections are also striving to conform to the standards proposed by such bodies and are making increasingly rapid progress in this direction.

In elevating the standards of various types of institutions, principally in the fields of rural education and higher education, the recommendations of the United States Bureau of Education have also had wide influence.

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[8] Members of certain of the denominational bodies, who believe that education should be under religious auspices, do not, of course, concur in this theory.

Whether American education ever will achieve complete uniformity in standards and methods of management is open to doubt. Uniformity is contrary to the genius of the Nation. The Americans are an individualistic people. Their educational systems and institutions have reflected this quality. These have maintained the right to expand as they chose and to adapt their courses to local needs, free from hampering restrictions. Their freedom is, in fact, one of the sources of their strength. Nevertheless, it may safely be said that there is now a national consensus of opinion as to what the standards of admission to and graduation from the principal types of institutions should be, that the standards agreed upon coincide in the main with those in force in the corresponding institutions of other leading nations, and that they are already maintained by the best institutions of the United States. Indeed, students from abroad will find in those educational centers to which they will probably be attracted unsurpassed facilities for advanced academic and professional training. The brief outline of the opportunities for university study in the United States presented in this pamphlet deals principally with conditions existing in these more prominent educational centers.

EVOLUTION OF THE UNIVERSITY.

THE COLLEGE.

An explanation of the prevailing organization of higher education in the United States properly begins with a description of the American college, an institution which has no exact counterpart in any other country.

Historically, the college is the oldest of American institutions. The first one, Harvard College, was founded in 1636 by the early English settlers in Massachusetts. Cambridge and Oxford furnished its prototypes. Following the example of these institutions, Harvard College was designed to give training in the liberal arts, principally Latin, Greek, philosophy, and mathematics. Most of its earlier graduates entered the Christian ministry. In fact, to supply properly trained young men for this profession was one of the chief objects sought in the foundation of Harvard and of the other colleges established during the first century of colonial life in the United States. Gradually, however, the purpose and character of the college changed. The more elementary stages of the subjects taught were given over to lower schools. New subjects were added to the curriculum. The college lost its theological bent, without becoming a training school for other professions. It still offered courses in the liberal arts, leavened more and more by the introduction of the sciences, and bestowed upon those who completed these courses the degree of A. B.

Three very significant changes in the relation of the college to the scheme of higher education occurred during the nineteenth century. The first of these was the founding of the professional schools of theology, law, and medicine. Although students were, and to some extent still are, admitted to these schools without a previous college education, the tendency has been constantly growing to demand a college degree or at least a period of collegiate study as a prerequisite for entrance. The college has thus become in certain measure a preparatory school for those who contemplate a course of professional training.

The second change to which reference has been made was the development within the college of departments of pure and applied science. By the middle of the nineteenth century the degree of B. S., granted for work done largely in the sciences, began to occupy a position of parity with the older degree of A. B.[a] Gradually also these courses in science ramified further into courses in engineering. The engineering schools or divisions thus became coordinate parts of many colleges of liberal arts.

The third and most momentous change in the status of the college was brought about by the establishment in connection with certain colleges of graduate schools on the model of the faculties of philosophy of German universities. The graduate schools have grown up principally in the last 45 years; indeed, the movement received its first strong impetus with the founding of Johns Hopkins University, incorporated in 1867 and opened for instruction in 1876. (See Sec. VI, p. 194.) The graduate schools offer to college graduates courses leading to the degrees of A. M. and Ph. D. and degrees of corresponding grade in the technical branches. They provide opportunities for advanced study in the arts and sciences and for research similar to those provided by the leading European universities.

From the origin of colleges until the foundation of the graduate schools the college curriculum, aside from the development of separate courses in science and engineering, had undergone but slight changes. A few new subjects had been added to it from time to time. Options between certain studies, as, for instance, between a modern and an ancient language or between two elementary sciences, were slowly introduced. In general, however, the college program of studies was fixed and definite, centering about a core of Latin, Greek, and mathematics. With the growth of the graduate school and the changed social and educational ideals has come the introduction of many new branches of study. Columbia University, for example, now offers to candidates for the bachelor's degree instruction in 45 different subjects.[10] Its offerings are almost paralleled by a number of other institutions.

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[a] A number of other baccalaureate degrees have also been conferred, such as Ph. B., B. Ped., etc., but the present tendency is toward the two older degrees of A. B. and B. S., according as the subjects forming the basis of the curriculum are humanistic or scientific.

The prescribed course of study for the bachelor's degree has broken down, and there is now a general tendency to confine required work to but two or three subjects and to allow the student much freedom of choice with respect to the rest of his program; or to offer various groups of studies organized to correlate with a single central subject and to permit the student to choose one of these groups. Even those colleges which have not extended upward into graduate schools, which still grant no degrees higher than the baccalaureate, have felt and have responded to this tendency.

THE UNIVERSITY PROPER.

The college is the nucleus from which all higher institutions of learning have sprung. Before the nineteenth century there were no universities in the modern sense of the word. With the rise of professional schools of theology, law, and medicine, most of which were outgrowths of colleges already established, American institutions began to approach university organization. The name "university" came also into common use to designate an institution composed of a college and one or more professional schools each under the control of a separate faculty. German influence was the dominant force in American higher education for many years, and the universities of the United States were deliberately molded to the German type. The establishment of the graduate schools marked the final step in this evolution, the four traditional faculties of the German university—theology, law, medicine, and philosophy—being thus represented.

But the modern American university is more complex in organization than its Germanic prototype. It has added other schools or divisions.[11] Schools of dentistry, of various branches of engineering, of agriculture, of veterinary medicine, etc., are now frequently included in a single university.[12] The University of California, for instance, has 19 such schools or divisions; the University of Chicago, 10; the

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[10] Compare p. 14.

[11] In some institutions the various divisions are also called colleges, as, for example, college of medicine, college of education, etc. The accepted nomenclature is now the following: A "college" is an institution requiring for admission graduation from a standard secondary school, or the equivalent, and offering a four-year curriculum leading to the first degree in arts or science, of such character as to qualify for admission to a graduate school of recognized standing.

The term "school," as applied to part of a university, is restricted to that part the standard of admission to which is not less than the equivalent of two years' work in the college, and which offers instruction of not less than two years' duration, leading to a technical or professional degree.

The term "division" is restricted to the larger administrative units of a college or university; as, for instance, the extension division, the division of agriculture, the division of arts and sciences.

[12] Thus, for instance, the type of institutions known as the Technische Hochschule in Germany, or the École Polytechnique in France, is in the United States commonly a or division of the university.

University of Illinois, 13; the University of Michigan, 8. As each new profession develops, a special division designed to give the training requisite for it is added to the university. In this manner, schools or colleges of commerce, of business administration, of domestic science, of ceramics, and of journalism have recently been established at a number of the larger universities. The process will undoubtedly continue with the further multiplication of the professions.

The term "university," however, has as yet no fixed connotation. The laws of the several States governing the incorporation of higher institutions vary greatly. Some require substantial assurance that an institution applying for charter will conform to the accepted standards of the designation which it seeks. In some States, on the other hand, it is possible to secure a university charter on the strength of prospects and good intentions alone. Even before the evolution of true universities, it was common for colleges offering nothing but a single course leading to the bachelor's degree to be chartered as universities. The name, therefore, antedated the thing. Many of these colleges still retain the name without having developed into universities. In certain sections of the country and in the minds of certain persons the college and the university are thus very naturally confused. No distinction is made between the two institutions. This confusion is the more readily understood if one recalls the fact that practically all the larger, thoroughly organized universities maintain a college of arts and sciences. A student who attends the college of arts and sciences of Cornell or the college of letters of the University of California is a member of the university and by tacit consent is allowed to call himself a "university student;" but his educational status is exactly the same as that of a student of Amherst College or Hamilton College, neither of which has any professional departments. Yet the student of the isolated college, like the two just mentioned, calls himself a "college student."

In the references made to universities throughout this pamphlet the term will be used in its strictest sense, i. e., to designate institutions maintaining professional divisions and conferring advanced degrees. Of these, there are already several score in the United States.

A comparative view of the best American universities would show an organization of schools and divisions substantially as recorded below. Not all the divisions mentioned are represented in every one of the strongest universities. This summary is intended rather to show the scope of university education than to describe conditions actually existing in any particular university. Detailed accounts of the organization and requirements of certain institutions selected to illustrate the best developments of American higher education appear in Section VI.

CHAPTER II.

ORGANIZATION OF THE TYPICAL UNIVERSITY.

THE COLLEGE OF ARTS AND SCIENCES.

The core of every university, except one,[13] is the college, variously called the college of arts and sciences, the college of letters, the college of liberal arts, etc. Whatever its name, its scope and character are everywhere approximately the same. It offers to graduates of secondary schools[14] a four-year course of study, leading usually to the degree of bachelor of arts or bachelor of science, or some other baccalaureate degree.[15] Generally the work is in part prescribed according to one of two methods. Certain subjects, such as English, one or more modern languages, Latin, a science, history, and mathematics are required of all students; or the courses are arranged in groups centering about a single subject, and each student may choose the group which best suits his individual tastes and purposes. In either case, a considerable portion of his course is elective; i. e., he may select at will from the subjects offered by the college enough to make up the number of courses required for graduation.

The undergraduate division of Harvard University, called Harvard College, gives instruction in the following subjects:

Anthropology, astronomy, botany, Celtic, chemistry, classical archaeology, classical philology, comparative literature, comparative philology, economics, education, Egyptology, engineering sciences, English, fine arts, French, geology and geography, German, government, Greek, history, history of religions, history of science, hygiene and sanitation, Indic philology, Italian, Latin, mathematics, military science, mineralogy and petrography, music, Netherlandish, palaeontology, philosophy, physics, physiology, public speaking, Romance languages and literatures, Romance philology, Scandinavian, Semitic languages and history, Slavic languages, social ethics, Spanish zoology. This list will indicate the possible range of undergraduate study in the best American universities.

Collegiate instruction is carried on by means of lectures, recitations, discussions, laboratory practice, and various kinds of written exercises. In the work of the first two years and in the elementary courses in all subjects, it has a tendency to be somewhat formal. The instructors assign definite tasks at each meeting of the class: A certain portion of the subject is to be mastered, a prescribed laboratory experiment is to be performed, a theme written on a specified subject, or a fixed number of pages read. At a subsequent meeting, students are tested on the assignment. In the later years of the course there is less formal prescription, and the student is thrown as far as possible on his own resources. His knowledge is tested by periodic examinations.

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[13] Clark University.

[14] In addition to the public high schools (see above), there are many private secondary schools which offer four or five year courses and which maintain approximately the same standards as the public high schools. The curriculum of the secondary school is discussed below (see p. 106). Students from other countries may enter American universities upon presenting evidence of preparation equivalent to that demanded of American students. The colleges of arts and sciences of most universities give entrance examinations to candidates for admission whose scholastic preparation has been secured in a school the standing of which is unknown to the university officers. (See also p. 59, and following.)

[15] There is still a wide variation in the standards of collegiate institutions, and consequently in the value of degrees. For further discussion of this condition, see note 26, p. 24.

Because of the long period devoted to elementary and secondary training, American college students are generally older than students of other countries who have reached the same stage of academic advancement. The average age of entrance to American colleges is between 18 and 19 years, the average age of graduation between 22 and 23. A few colleges, however, allow students to complete the course in three years by taking extra work.

THE COLLEGE OR SCHOOL OF ENGINEERING.

Coordinate with the college of arts and sciences is the school or college of applied science or engineering. This offers to graduates of secondary schools a four-year course leading to the degree of B. S. in some division of engineering, e. g., civil, mechanical, mining, metallurgical, electrical, hydraulic, architectural, chemical, and sanitary engineering.[16] In some institutions work in these various branches is organized in separate schools, e. g., school of mining engineering, school of civil engineering. The first part of the curricula in engineering is devoted particularly to a thorough grounding in mathematics, physics, and chemistry, the fundamental sciences upon which all engineering work rests. The course of study for the first year is frequently uniform for students in all branches of engineering; indeed, the present tendency is toward a still greater measure of uniformity in the early years, followed by specialization in the last year or the last two years.

The school or college of engineering is in the scheme of American education an undergraduate division coordinate with the college of liberal arts, admitting students with the same preparation and giving its graduates the bachelor's degree.[17] It is, nevertheless, in spirit and tendency a professional school, fitting young men for the immediate practice of their professions as a means of livelihood. This fact affects the college of engineering in two ways. In the first place, its efficiency as a training school is constantly tested by the success of its graduates in actual professional work. It suffers the consequences without delay if its standards are not kept high. The college of liberal arts, whose purpose is to give general culture, is subjected to no such test.

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[16] The degree given on the completion of one of these courses is not always B. S. Cornell, for example, gives the degree of M. E. to those who have completed courses in mechanical, electrical, or mining engineering.

[17] A few institutions, e. g., Columbia, have made the school of engineering or applied science a graduate department. (See Sec. VI, and p. 219.)

Secondly, and as a result of its professional obligations, the work of the engineering school is for the most part more concrete and practical than that of the college of liberal arts. Not only in the extensive well-equipped laboratories and machine shops of the university itself, but in shops and factories of industrial organizations and in the field, the engineer in training is given an opportunity to perform those operations by which he may later earn his living.

The course of study of the engineering division is determined by the requirements of the profession. Most of it, therefore, is prescribed. Choice from among the various branches of engineering represented furnishes the principal opportunity for election.

Recently a tendency to lengthen the period of preparation for the profession of engineering has manifested itself. Several leading universities now offer five and six-year courses in the various engineering branches. Five-year courses, which are the commoner, include either a considerable amount of work in the college of arts and sciences designed to broaden the student's cultural training or a more extended specialization in the branch of engineering which the student has chosen. The degrees of E. E., M. E., C. E., A. E., and Arch. are generally awarded at the end of these more highly specialized courses. Such degrees rank higher than the degree of B. S.

Postgraduate work leading to the degrees of M. S., Ph. D., and Sc. D. in the engineering sciences is now given also at several of the foremost universities. The conditions of study for these degrees, whether in the engineering sciences or in pure science and the arts, are similar. They will be discussed under the caption "The Graduate School." (See below.) The increasing facilities for advanced study and research in the various lines of engineering represented by the five-year courses and the graduate courses just referred to indicate a tendency to prolong the period of general and special training of the engineer until it occupies as many years of the course as the training for the older professions.

THE COLLEGE OR SCHOOL OF AGRICULTURE.

In 1862 the United States Congress, under the Morrill Act, made to each State grants of public lands, the proceeds from the sale of which were to form a fund for the maintenance of colleges of agriculture and the mechanic arts.[18] Later acts provided for annual appropriations by the Federal Government for the support of these institutions and for the promotion of agricultural research and demonstration.[19] In the 57 years since the passage of the original act, these so-called land-grant colleges have become among the most important agencies for training in the technical professions. In a number of States the land grant made possible the foundation of a State university, and the State university of 20 States is now legally designated a land-grant college.[20] Several of these institutions, for instance, the University of Wisconsin, the University of Illinois, the University of Minnesota, and the University of California are among the largest and best-equipped State universities in the country. The State governments have also made increasingly liberal appropriations for the support of these departments of the State institutions. Consequently, agriculture and the mechanic arts occupy an especially favored position among professional studies.

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[18] Mechanic arts are interpreted to mean chiefly the various branches of engineering.

The engineering branches, which were discussed briefly in the preceding section, are taught at many other institutions than land-grant colleges; in fact, nearly every full-fledged university, public or private, maintains an engineering division and there are numerous special schools of engineering as well. But the land-grant colleges have a practical monopoly of professional instruction in agriculture. In describing a college of agriculture as an integral part of a typical American university, attention is therefore called to the fact that these colleges are, with few exceptions, to be found only in connection with the 20 State universities which are land-grant institutions.

The typical college of agriculture, then, offers to graduates of a secondary school a four-year course in agriculture leading to the degree of B. S. Like the colleges of enginering, the colleges of agriculture are often subdivided, schools of forestry and home economics being the commonest of these subdivisions. The work of each course combines instruction in the general sciences, languages, and mathematics, with technical instruction in agriculture and actual practice in the laboratories, dairies, barns, and on the farms connected with the university.

Special agricultural schools of secondary grade are also maintained in connection with a few State institutions, e. g., the University of Minnesota, Colorado Agricultural College, Clemson Agricultural College (South Carolina).

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[19] In 1914 Congress provided for an annual appropriation of $10,000 to each State for extension instruction in agriculture and home economics. This sum is further supplemented by increasing annual appropriations for the same purpose, beginning in 1915–16, and eventually reaching the total of $4,100,000, to be distributed among the States in proportion to the rural population in each.

[20] In 19 other States the land-grant college is a separate foundation, independent of the State university, and often rivaling it in student enrollment and in the excellence of its undergraduate courses, especially in pure and applied science.

The college of agriculture is a professional school. Its first purpose is to train students for the intelligent practice of their profession. This is the principal object of the four-year course just mentioned. But as a State institution, largely supported by State funds, the college of agriculture has obligations toward the State. It can serve the State materially by disseminating agricultural information among the farmers of the State who have not had a chance for professional training. Most colleges of agriculture are now attempting to do this. Short courses ranging from 1 to 14 weeks have been established for farmers. The university also sends lecturers and demonstrators among rural communities to give practical instruction on the farms themselves.

A third important function of the colleges of agriculture is to extend the science of agriculture by means of experiments and investigations. In this work also the Federal Government has lent assistance. Under an act of 1887 agricultural experiment stations were established in every State, and an annual appropriation of $15,000 was set aside for their support. This annual appropriation has since been increased to $30,000. In most States where the land-grant college and the State university are united, the experiment station is attached to the university. It furnishes unsurpassed facilities for agricultural research.

THE COLLEGE OR SCHOOL OF VETERINARY MEDICINE.

Several prominent universities and colleges of agriculture and mechanic arts now maintain schools of veterinary medicine, which provide instruction in the causes and treatment of animal diseases and in the principles of sanitary science as applied to live stock. The large proportion of the Nation's wealth invested in live stock, the dependence of agriculture upon it, and the influence of certain animal diseases, notably tuberculosis, upon the health of the community give special importance to the profession of veterinary medicine.

The typical college of veterinary medicine offers to graduates of a secondary school a three-year course leading to the degree of D. V. M. or V. M. D. The course itself is closely prescribed. It combines instruction in the fundamental medical sciences—chemistry, anatomy, and physiology—with such special branches as animal pathology, surgery, and veterinary medicine. Clinical instruction is given in the veterinary hospitals connected with the school. There is generally provision also for graduate work in special branches of veterinary science.[21]

THE COLLEGE OR SCHOOL OF COMMERCE.

Among the more recent additions to American universities are the schools or colleges of commerce or business administration. The typical college of commerce offers to graduates of secondary schools a four-year course leading to the degree of B. S. or A. B. The first part of the course is largely devoted to such foundational subjects as mathematics, English, natural sciences, modern foreign languages, history, and economics. These are followed in the last two years by the broader technical subjects designed to give general preparation for business life, such as various phases of business administration, commercial law, and advanced economics.

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[21] New York State Veterinary College, at Cornell, offers an optional four-year course in veterinary medicine.

THE COLLEGE OR SCHOOL OF JOURNALISM.

Schools of journalism are also among the newer developments at several universities. These offer to graduates of secondary schools a four-year course leading to the bachelor's degree (A. B., B. Litt., B. J.). The foundation of the work in the schools of journalism is largely composed of courses in the social sciences and English, which are designed to familiarize the student with present economic and social conditions and to develope his power of written expression. These courses cover about two years and are followed by technical instruction in the methods of modern journalism. This includes actual practice in reporting, interviewing, and newspaper editing. The aim of all these schools is voiced in the official announcement of the school of journalism of Columbia University. It is "to make better journalists, who will make better newspapers, which will better serve the public."

THE COLLEGE OR SCHOOL OF PHARMACY.

The schools of pharmacy, which are now included in most of the larger universities, usually offer courses leading to three different degrees—Ph. G., Ph. C., and B. S. in Pharmacy or Phar. B. The entrance requirements are substantially the same as for those schools and departments already described. The degree of Ph. G. (graduate in pharmacy) is conferred at the end of a two-year course, consisting chiefly of instruction in botany, analytical chemistry, and pharmacy. Several States demand as a prerequisite for a license to practice the profession of pharmacist either a certain amount of practical experience in a place where drugs and medicines are compounded or dispensed or a course of instruction in a school of pharmacy. Courses in pharmacy are adjusted to meet these requirements.

The course leading to the degree of Ph. C. (pharmaceutical chemist) is three years in length. It is "designed more especially for those who wish to enter the commercial field of pharmaceutical chemistry or food and drug analysis."[22] More advanced instruction in pharmacy is given, together with such general studies as sciences and foreign languages.

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[22] Quoted from the catalogue of the University of Wisconsin.

The four-year course leading to the degree of B. S. in Pharmacy includes a combination of cultural studies and the advanced work in pharmacy taken by the candidates for the degree of Ph. C.

Opportunities for specialized graduate study and research in some department of pharmacy are frequently offered in the graduate schools of leading universities. The aims and methods of graduate study are essentially the same whatever the department. They are described below. (See under "Graduate School.") The degrees of A. M., M. S., Ph. D., Sc. D., and occasionally Phar. D., are conferred upon graduate students in pharmacy.

THE COLLEGE OR SCHOOL OF DENTISTRY.

The organization of 29 American universities and colleges now includes a school of dentistry, which offers to graduates of secondary schools a three-year course leading to the degree of D. D. S. or D. M. D. The curriculum provides first for a study of those elementary scientific subjects which form the groundwork of training in medicine: Anatomy, chemistry, bacteriology, physiology, and pathology. Instruction accompanied by extended clinical and laboratory practice in operative and prosthetic dentistry follows. The clinics of the best American dental schools furnish each student ample opportunity for practice in all branches of dentistry.

Although dentistry is a separate profession, and although training for it is quite fittingly carried on in a special professional school, nevertheless there is growing recognition of the fact that it is a branch of medical science. There has arisen in consequence a tendency to emphasize the affiliation of dental and medical education. Seven dental schools are now departments of medical schools. One State has already passed a law requiring that hereafter all practitioners of dentistry shall hold a medical degree. While there seems to be no immediate prospect that other States will take the same radical action, there is a very decided trend of opinion in the direction of lengthening the course in dentistry from three to four years. A number of dental schools are meeting this demand for further scientific training by offering postgraduate courses open to holders of degrees in dentistry and to others who have had practical experience.

It is appropriate to call attention to the excellence of American dental schools and clinics. The conspicuous success of American practitioners of dentistry is without doubt largely due to the splendid facilities for training in the profession that have been developed in the United States.

THE COLLEGE OR SCHOOL OF EDUCATION.

Among the important contributions which the United States has made to professional training may be counted the creation of special schools of education. Normal schools organized principally for the training of elementary-school teachers have existed for a long time. They owe their origin to European experiments in the same direction.[23] But the schools of education whose aim is to prepare prospective high-school teachers, school principals, supervisors, and superintendents of city school systems, are relatively new and distinctly American institutions. Their establishment has come about because of the evident need of trained teachers and directing officers to carry on the work of public secondary education and the administration of school systems. With a few exceptions they have attained most vigorous growth in the States where the State university occupies a position of educational leadership. (But see especially the accounts of the organization of Columbia University, University of Chicago, and University of Missouri, Section VI, pp. 176–78, 212–13, 219–22.)

The typical school of education offers to graduates of secondary schools a four-year course leading to the bachelor's degree.[24] The course usually combines three distinct elements: General training in the arts and sciences, specialization in one or two subjects which the candidate proposes to teach later, and instruction in the theory and practice of teaching.

Among the the strictly professional subjects emphasis is laid on educational psychology, the history and philosophy of education, and the organization and management of schools. The best-equipped schools of education now provide opportunities also for students to observe skillful teaching and for practice teaching under supervision.

There is a marked tendency toward extending the scholastic range of schools of education, and consequently increasing the amount of professional training demanded of secondary-school teachers. The addition of a fifth year to the course in education is a manifestation of this tendency. At the completion of the longer course, the degree of A. M. is conferred. In this way the school of education is gradually merging into the graduate school. It will probably not be long before the general cultural and informational subjects will be relegated to the college of letters, and the school of education will advance to the rank of a graduate school offering purely professional instruction to college graduates. Graduate courses in education leading to the degree of doctor of philosophy are now commonly offered by the graduate departments of the best universities.

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[23] A discussion of normal-school education lies without the scope of this bulletin. In general, it may be said that the entrance requirements of the best normal schools are similar to those of the colleges of arts and sciences. For high-school graduates the course is usually two or three years, with emphasis on the theory and practice of pedadogy. It often leads to a special degree. Any foreign student who is interested in normal-school training is urged to apply to the Bureau of Education for full information.

[24] A great variety of bachelor's degrees are granted for work in education, e. g., B. Ped., B. Litt., A. B., B. S. in Education, and so on.

THE OLDER PROFESSIONS.

The group of schools just described furnish training for those professions which are of comparatively recent origin or which have but lately risen to the dignity of special prefessional preparation. The professional beginnings of theology, law, and medicine, on the other hand, run back to the founding of the European universities. A certain superior prestige has attached to these older callings, even in a democracy like the United States. This has been reflected in the effort of the schools of theology, law, and medicine to enforce a higher standard of attainment for admission and for graduation than has yet been adopted by the other departments. They therefore may be said to form a second and more advanced order of professional institutes inside the general organization of the university.

THE COLLEGE OR SCHOOL OF THEOLOGY, OR THE DIVINITY SCHOOL.

The oldest of all professional schools in the United States is the school of theology or the divinity school. Indeed, the college itself, as has been explained, was established to train an enlightened ministry for the Christian (Protestant) Church. Theological instruction has therefore always been a part of the curriculum of the oldest universities. They were themselves theological schools until they consigned theology to a special department, which has happened generally within the last century.

The modern theological school is either frankly a sectarian school, or else it has become what the uncompromising fathers of the Nation would have deemed impossible—a nonsectarian school of theology attempting to study "all matters connected with theology * * * in a spirit as free as that in which philosophy, history, and the classical literature are studied in our colleges."[25] In mentioning the requirements and scope of the typical school of theology, it is understood that these schools are almost exclusively connected with denominational universities or else are entirely independent institutions.

The stronger schools of Protestant theology offer to graduates of a college of recognized standing, or to others who can show equivalent preparation, a three-year course leading to the degree of B. D. or S. T. B. The course is almost entirely professional, varying as to theological bias with the denomination which maintains the school.

The entrance requirements for Catholic schools of theology are somewhat higher. (See Section VI, pp. 166–69, Catholic University of America.)

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[25] Quoted from the announcement of the Harvard Divinity School.

THE COLLEGE OR SCHOOL OF LAW.

English and American legal systems differ radically from those of most other nations. Because of this fact, foreign students will probably not be attracted in any large numbers to American law schools for the purpose of fitting themselves for the immediate practice of their profession at home. Nevertheless, there is a growing conviction among lawyers and jurists that a knowledge both of English common law and the code systems of continental Europe and Latin America is very valuable to the legal practitioner of any country. The spirit and motives of a country are reflected in its laws. An acquaintance with the latter tends to broaden international sympathies. It is for this reason, as well as to complete the account of the component parts of the American university, that the law school is mentioned here. Attention is called especially to the excellent courses in jurisprudence, international law, and diplomacy offered by the following institutions: Columbia University, Yale University, George Washington University, Harvard University, and the Law School of the Tulane University of Louisiana. The legal system of the State of Louisiana is based on the Spanish system, and is therefore closely related to the systems of the Latin-American countries. Detailed accounts of the offerings of these institutions may be found on pages 164–66, 170–71, 192–94, 197–200, 219–22.

The best American law schools now offer to students who have had at least two years of collegiate training a three-year course in common and statute law, leading to the degree of LL. B.

THE SCHOOL OR COLLEGE OF MEDICINE.

No other professional schools connected with American universities have made such noteworthy and gratifying advances within recent years as the schools of medicine. There have been three conspicuous lines of progress: The growth of laboratory equipment through liberal State appropriations and private benefactions, the increase in hospital facilities, and the raising of standards of admission. As a result of these developments the best medical schools of the United States are now unsurpassed in physical equipment, and demand as thorough preparation for entrance and graduation as do those of other leading nations.

The high standards recommended by the American Medical Association and put into practice by the more progressive schools of medicine have been rendered permanent by the subsequent action of numerous State licensing boards which fix the educational preparation to be required of practitioners of medicine in their respective

States. Medical education[26] has therefore attained a status consonant with the antiquity and importance of the profession.

As a division of the university, the medical school now ranks with the schools devoted to training for the other traditional callings. The typical medical schools of the best universities require for entrance a four-year high-school course, including two years of Latin, and two years of college work, which must include at least a year each of physics, chemistry, and biology, and sufficient German and French to insure a reading knowledge of those languages. To such students the medical school offers a four-year course, consisting of laboratory, didactic, and clinical instruction in the theory and practice of medicine, and leading to the degree of M. D. Associated with all high-grade medical schools are hospitals, in which medical students study at first hand diseases and their treatment and in which they serve as internes.

Included in the "ideal standard" set up by the American Medical Association is the recommendation that a fifth year be added to the medical course, in which the student shall act as interne in a hospital. This recommendation has already been adopted by several of the leading medical schools of the country. Others, while not including the year's interneship in the medical course, provide ample facilities for their graduates to secure this privilege.

A recent development in medical education has been the establishment of postgraduate courses in medicine devoted chiefly to advanced study and research. As yet there has been no general organization of these courses into curricula leading to higher medical degrees. Attention should be called, however, to one higher medical degree which has already gained recognition. This is doctor of public health. The degree is conferred upon holders of the degree of M. D. after one or two years of postgraduate study devoted to problems of sanitation and community diseases and to special research.

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[26] Students from other countries who are unfamiliar with American educational conditions should remember that there are many medical schools of low standing and proprietary institutions which exploit this or that therapeutic revelation. One of the results of State autonomy in education is the irregularity of State requirements for professional practice, not only in medicine, but in law, pharmacy, and other professions. Licensing regulations in many States are still lax. Moreover, as has been noted, there is no uniform legislation governing the incorporation of degree-giving institutions. The fact that a man bears the title of doctor, therefore, or holds the degree of A. B. or LL. B. gives no assurance that his education has been either prolonged or specialized. Unscrupulous persons and well-meaning but ignorant persons have taken advantage of these conditions to establish in many States institutions purporting to give collegiate or professional training, but which lack both the physical equipment and the teachers needed to make such training effective. A reliable guide to the standing of schools of medicine is the classified list of the American Medical Association. (See pp. 262–63.)

Students seeking other kinds of training, general or professional, may safely attend any of the institutions described in this bulletin. They are also invited to correspond with the United States Bureau of Education, which will furnish full and impartial information regarding the offering of any institution, whether included in this publication or not.

In spite of these inequalities among the schools of medicine, it is quite just to emphasize the high standards of medical education. The standards are set by the leading institutions. There are already 66 recognized as of highest grade by the American Medical Association. (See pp. 262–63.)

The very potent influence of this publicity in bringing about the improvements which the association has recommended illustrates strikingly the power of a voluntary educational association to affect the policy of institutions over which it has no official control. (See p. 9.)

Most large universities now provide for a six or seven year course, combining work in the department of arts and sciences with the course in medicine and leading to the two degrees A. B. (or B. S.) and M. D.

Students from tropical countries will be especially interested in the very excellent courses in tropical medicine offered by the medical schools of the Tulane University of Louisiana and Harvard University.

THE GRADUATE SCHOOL.

The capstone of the American university is the graduate school of arts and sciences. Originally planned to correspond to the faculty of philosophy of the German university and offering instruction merely in pure science and the humanities, the graduate school has far outgrown the first conception of its function. The graduate school of the large American university now usually organizes into one administrative unit[27] all the advanced teaching and all the facilities for original research provided by the university in any of its departments. Under this arrangement holders of the bachelor's degree who desire to specialize, for example, in engineering, in medical science, or in pharmacy, as well as in pure science and the humanities, enter the graduate school.

The American graduate school has a double aim. Chronologically, the first is to teach to properly prepared students the most advanced and specialized phases of the subjects offered by the university. More important, however, if second in point of development, is its obligation to increase the sum of human knowledge. Research is the life blood of the graduate school. The graduate school is differentiated from the ordinary professional schools by being devoted to the principle of research. As a rule, schools of medicine and engineering, for instance, aim primarily to pass on to the student a body of knowledge which is already organized and of accepted professional value, and so to train practitioners of already standardized professions. The graduate school places first emphasis upon the advancement of learning. Its teachers are expected to be actively engaged in extending the boundaries of knowledge and to direct students in the conduct of investigations. The vitality of the graduate school is properly judged by the amount and quality of its creative output.

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[27] This consolidation is not effected everywhere; for example, Columbia University maintains a faculty of philosophy, a faculty of political science, and a faculty of pure science; Harvard University has a graduate school of arts and sciences, a graduate school of business administration, a graduate school of applied biology, and a graduate school of medicine. The general description of the functions and facilities of the graduate school applies equally, however, to these and to other institutions which have not combined graduate departments into a single unit.

Training for productive scholarship is still young in the United States. In view of its aims the graduate school is less susceptible to standardization than the schools already described. Its excellence will always depend in large measure on the fertility and originality of its teachers. No two schools, however skillfully administered, can be equal or equally strong throughout; nor, on the other hand, is a single school ever likely to have a monopoly of teaching and investigating talent in all lines. One will perhaps be preeminent in psychology, another in economics, another in chemistry. This variation inheres in graduate study. It has always characterized the research departments of European universities, which have had a considerably longer history.

Granting these inevitable inequalities, it is worthy of note that the great independent institutions of the East and the best-developed State universities of the West and Middle West have taken the steps needed to secure a high general level of graduate instruction. They have invested enormous sums in library and laboratory equipment and have vied with one another in seeking as teachers the most distinguished scholars, wherever they might be found. As a result of these efforts, no better material facilities for advanced study and research now exist anywhere. Certain American professors also rank with the leaders in their respective branches and have won international recognition. In fact, no other department of American higher education except the medical school has experienced so rapid and substantial development. Most graduate schools have been established within 25 years. National appreciation of the value of research, which has made this last expansion of the university possible, is hardly 15 years old; yet the enrollment in graduate courses in the United States has increased from 4,340 in 1893 to 7,911 in 1903, and to 14,406 in 1918. A correspondingly increased volume of scientific monographs has issued from the universities.

It is therefore safe to say that the students from abroad will now find in the graduate schools of the foremost American universities opportunities for special training and for research broadly equivalent to those provided by the faculties of philosophy and the scientific institutes of the universities of Europe. Such students will naturally seek those institutions which offer the best facilities and which possess the most eminent teachers in the particular lines in which they are interested.

A subordinate function of the graduate school has been the training of teachers for higher institutions. Indeed it is now customary for appointing authorities to demand of candidates for higher teaching positions a more or less extended period of graduate study. Nevertheless there has been as yet no general adaptation of graduate courses to the professional needs of the prospective teacher. American graduate schools, like the universities of Europe, have in this matter proceeded on the assumption that the most important thing for the teacher of mature pupils is to know his subject. The method of its presentation may then safely be left to his individual judgment.

The typical American graduate school admits as students only those who hold a bachelor's degree from a college or university of recognized standing. It confers two orders of degrees, the master's degrees[28] and the doctor's degrees.[29]

To secure a master's degree one year of postgraduate study, devoted as a rule to not more than three subjects, one of which, called the major subject, receives the bulk of the student's attention, is usually required.[30] Many universities also demand a thesis embodying the results of a small piece of research.

The minimum period of postgraduate study for a doctor's degree is usually three years. The time spent and the number of courses taken, however, are of secondary importance. To receive the degree it is necessary that the candidate not only demonstrate in examination his mastery of his special field but also by means of a dissertation or thesis make an original contribution to knowledge in that field. Most universities require the dissertation to be published. The examinations are both written and oral. In fact, the requirements for the American degree of doctor of philosophy parallel closely those proposed by the German universities for the same degree. But American universities have recently attempted to demand of candidates for the degree a somewhat longer scholarly preparation and a more substantial thesis.

THE SUMMER SCHOOL.

The academic year is as a rule approximately nine months long. It usually extends from the middle of September to the middle of June. Many universities and colleges now either maintain a special summer school during about six weeks of the vacation period or carry on a summer session lasting throughout the summer months. Summer schools, which generally are confined to the undergraduate and graduate departments of arts and sciences, serve two main purposes. They enable teachers in elementary and secondary schools to pursue special courses of study for professional advancement. They offer opportunities to college or university students who have failed to complete all the work required in the regular term to make good these deficiencies. In addition, summer schools are to some extent patronized by other classes of persons. While in the majority of summer schools the courses are planned with special reference to the needs of teachers, nevertheless the student whose interests are not pedagogical generally finds summer courses in most of the subjects ordinarily offered by the institution during the regular winter terms. The more advanced courses usually are not given in summer.

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[28] A. M., M. Com. Sci., M. F., M. L., M. Ped., M. S., M. S. in Agr., Cer. Eng., Chem. Eng., C. E., E. E., E. Min., Mech. E., Met. E.

[29] Ph. D., Sc. D., Phar. D.

[30] Two years of postgraduate study are required for the master's degree at Yale and Johns Hopkins Universities. (See Section VI, pp. 164–66, 194–96.)

Summer schools present special attractions to the foreign student. If he happens to arrive in the United States in June or early July, he may profitably use his time and prepare himself for his later regular matriculation by enrolling in a good summer school. Opportunities for the study of English are commonly offered. After he has begun his collegiate or professional course he may shorten the period of study and also learn something of different universities by frequenting summer schools. It is possible to complete from a sixth to a quarter of a year's work during a summer course.

EQUIPMENT.

Such is the organization of a typical American university, but no account of these institutions, however brief, would be accurate unless it mentioned the astounding array of material appliances possessed by almost every one. In no other country has education been the recipient of such large and numerous benefactions from philanthropic men and women. The greatest of these have gone to American universities. Furthermore, the prosperous Commonwealths have contributed huge sums for the equipment of their State institutions. Certain of the richer universities are provided with almost everything they can possibly need to make their work effective.[31] A description of a single great university plant would occupy too much space to be included in such a brief survey as this, but a citizen of another country who has never seen an American institution may form some idea of the magnitude of these establishments by the subjoined statements of the value of grounds and buildings of leading universities as reported to the United States Government: University of Illinois, $4,758,621; University of Michigan, $5,285,053; University of Wisconsin, $7,086,799; Cornell University, $7,739,700; University of California, $11,400,891; University of Chicago, $11,698,223.

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[31] For statements of laboratory and library facilities, see Section VI. Special attention is called to the immense and rapidly growing libraries of the higher institutions.

SPECIAL RESEARCH FOUNDATIONS.

American higher education has recently been reinforced by a group of special foundations established to further scientific and sociological research. Most of these owe their origin to the generosity of a single individual of large means. While not educational institutions, these foundations have made possible numerous investigations which have not only affected educational thought and practice, but have also raised the prestige of science throughout the United States. They should therefore be reckoned among the scientific resources of the Nation. Prominent among these institutions are the Russell Sage Foundation, the Carnegie Institution, the General Education Board, the Carnegie Foundation for the Advancement of Teaching, and the Rockefeller Institute for Medical Research.

CHAPTER III.

INDEPENDENT TECHNICAL AND PROFESSIONAL SCHOOLS.

In addition to the great universities giving instruction in practically all the departments of knowledge and including in their organization all types of higher professional schools, there are numerous other institutions of less complex organization. In fact, as has already been stated, the university is a comparatively recent creation. Many of these other schools, colleges, and institutes antedate the origin of universities. It is also true that many kinds of professional training can be quite as successfully and often as economically carried on in separate institutions established for that purpose alone. Some of the foremost training schools for engineering, medicine, dentistry, law, theology, and other callings are independent institutions not connected with any university.

The Massachusetts Institute of Technology,[32] for example, offers courses in the various branches of engineering and applied science. Rensselaer Polytechnic Institute[33] is devoted chiefly to civil, electrical, mechanical, and chemical engineering. Stevens Institute of Technology[34] gives only courses in mechanical engineering. The College of Physicians and Surgeons in Baltimore[a] and Jefferson Medical School of Philadelphia are not affiliated with universities. Among theological schools the majority are independent institutions, as, for example, the Newton Theological Institution (Baptist), the Theological Seminary of the General Synod of the Evangelical Lutheran

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[a] This institution has since been consolidated with the medical school of the University of Maryland.

[32] See Sec. VI, pp. 201–3.

[33] Ibid., p. 227.

[34] Ibid., p. 219.

Church in the United States, and nearly all Catholic theological seminaries. Several States have established from the proceeds of the land grants[35] special colleges of agriculture and mechanic arts separate from the State university, as, for example, the Kansas State Agricultural College, the Iowa State College of Agriculture and Mechanic Arts.[36]

In range and content the courses given at these independent institutions are similar to those of the corresponding professional divisions of the large universities. Some of the schools of engineering, indeed, have become famous throughout the world for the high excellence of the work done in one or more departments.

CHAPTER IV.

INDEPENDENT AND DENOMINATIONAL COLLEGES.

Numerically the most important of the institutions not included in the organization of some university are the independent colleges offering courses in arts and sciences,[37] the majority of which confer the bachelor's degree. They present a wide variety of types and almost as great a variety of scholastic standards; nevertheless, certain generalizations can be made concerning them.

As a rule the independent colleges give instruction in a more limited range of subjects than are open to candidates for bachelor's degrees at the larger universities. For instance, as against the 45 branches which the Harvard undergraduate may select, Carleton College offers work in the following: Astronomy, Bible, biology, chemistry, economics, education, English, German, geology, Greek, Hebrew, history, Latin, mathematics, music, philosophy, physical education, physics, political science, public speaking, Romance languages, Scandinavian languages, sociology. Williams College in the following: Art, astronomy, biology, chemistry, economics, English, geology, German, government and political science, Greek, history, Latin, mathematics, military art, philosophy, physics, physiology and hygiene, public speaking, religion, Romance languages. Reed College in the following: Biology, chemistry, classical languages, economics, education, English, Germanic languages, Greek, history and political science, Latin, mathematics, philosophy, physics, psychology, Romance languages, sociology.

The curricula of these institutions, then, are more nearly comparable to those of the French lycée and the German Gymnasium and Oberrealschule, most of the studies included being sanctioned by age-long tradition as appropriate training for the first degree in arts.

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[35] See p. 16.

[36] For further details, see Sec. VI, pp. 185–90.

[37] Some of these institutions are called universities. See above, p. 13.

Reference has been made to the principle of election, in accordance with which the student chooses to a greater or less extent the subjects which shall compose his college course. Certain colleges of high standing have from conviction resisted the encroachments of this relatively new theory in higher education. For instance, at the leading Catholic institutions, which stand committed to a fixed educational procedure, courses in arts offer little freedom of choice. The courses leading to the degree of A. B. at Wabash College and William Jewell College are also largely prescribed. On the other hand, many independent colleges provide as extensive opportunities for election as their resources will permit. These differences in academic policy may properly have weight with the foreign student seeking a collegiate education in the United States.

The test of the excellence of a college, however, is not the multiplicity of its offerings, but the quality of work done. The stronger colleges, perhaps a quarter of the whole number, enforce a standard of accomplishment for the bachelor's degree every whit as high as that maintained by the best universities. The universities themselves readily concede this. They accept for advanced study the holders of degrees from these colleges on the same terms as their own graduates.[38] The foreign student need have no hesitation, therefore, in choosing an independent college rather than the collegiate division of some larger university as the institution in which to secure the A. B. or B. S., provided he assures himself in advance that the degrees of the college of his choice are valid educational currency. Among the colleges recognized by the larger universities are, on the one hand, some[39] which offer instruction only in the rather circumscribed group of studies which have for generations formed the basis of the A. B. course, and, on the other, institutions[40] which more nearly approximate the scope of university undergraduate departments.

Probably the most striking difference between the independent colleges and the universities is the difference in size, which also involves a profound difference in the institutional life. The independent college is commonly known as the small college, for the reason that its students usually number from 100 to 500. Universities of the type described frequently enroll from 1,000 to 5,000 students.[41] The foreign observer may be led to wonder why it is that small colleges persist and multiply in a country so liberally provided with large institutions, many of them State supported, giving the same opportunities for general education. The principal reasons are the following:

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[38] At its meeting in 1913, the Association of American Universities, composed of the following 22 institutions—University of California, Leland Stanford Junior University, Yale University, Catholic University of America, University of Chicago, University of Illinois, Indiana University, University of Iowa, University of Kansas, Johns Hopkins University, Harvard University, Clark University, University of Michigan, University of Minnesota, University of Missouri, University of Nebraska, Princeton University, Cornell University, Columbia University, University of Pennsylvania, University of Virginia, University of Wisconsin—recommended that the degrees of 119 American institutions be recognized by foreign universities as of equal value with the degrees of the members of the association. Of these 118 institutions, 53 were colleges or technical schools of the type under discussion. This list has since been extended.

[39] For example, Albion College.

[40] For instance, Oberlin College.

The prime mover in the foundation of most American colleges has been some religious denomination. The college so founded draws chiefly children of members of its denomination, and in a peculiar sense may be said to serve the denomination, although communicants of other sects are, as a rule, freely admitted. Thus there are Methodist colleges, Presbyterian colleges, Catholic colleges, Lutheran colleges, and many more. Those who believe that higher education must not only be imbued with the spirit of religion, but definitely correlated with a particular religious doctrine, and interpreted in terms of that doctrine, generally patronize a college of the desired denominational affiliation. Many denominations have met and encouraged this tendency by establishing colleges all over the land, wherever the denominational membership was large enough to give promise of support. It is no unusual thing to find several colleges in the same city or located within a few miles of one another in country districts each serving a different religious constituency.

The typical denominational college emphasizes the religious life and makes a special effort to create a religious atmosphere. More or less religious instruction generally appears in the curriculum. Denominational religious services are held daily, and attendance is usually required. Religious associations often occupy a prominent place among the social organizations which claim part of the student's leisure hours. It will be seen that the denominational college makes a very distinctive contribution to American higher education. The State university, owing to the nature of its support, must be nonsectarian. The large independent university, no matter under what auspices it was founded, can hardly have such complete denominational polarization. Foreign students of strong denominational attachments may well bear these facts in mind when selecting a college.

Neither in the United States nor in other countries is there consensus of opinion as to the extent to which sectarian influences and sectarian religious teaching should enter into higher education. In the last two decades the tendency has undoubtedly been toward the

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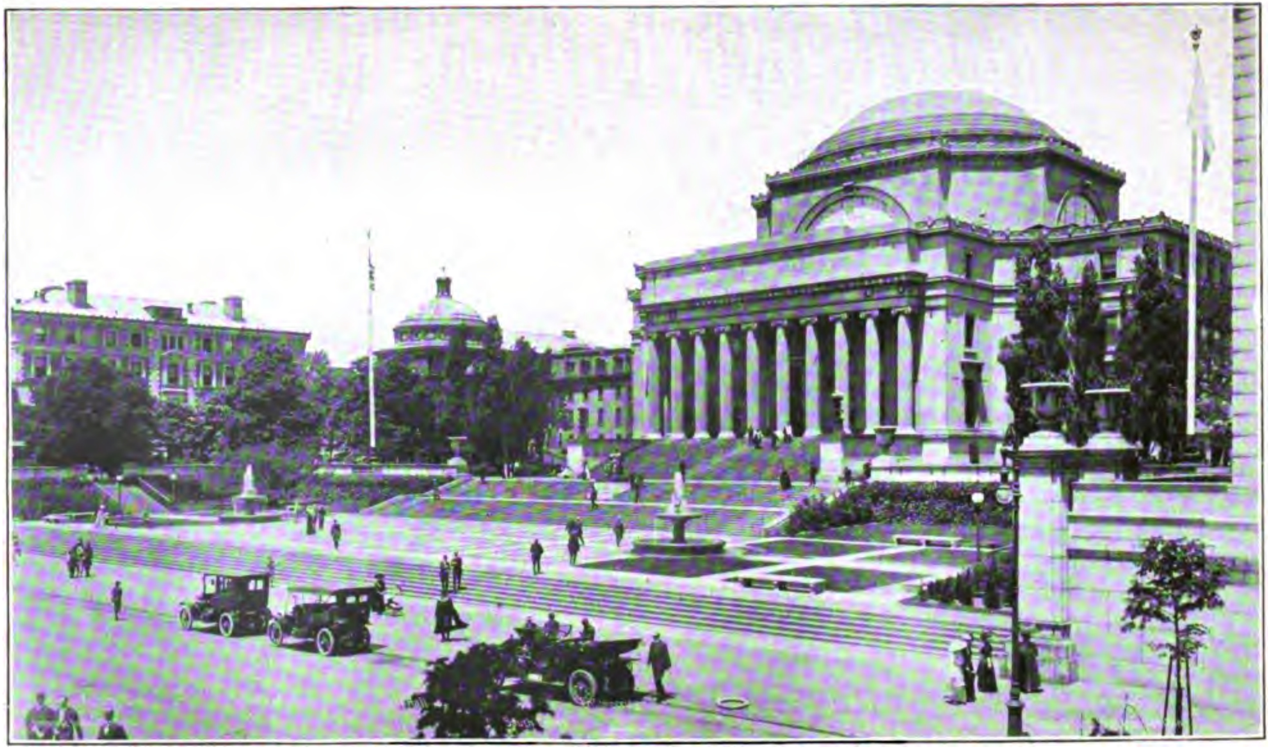
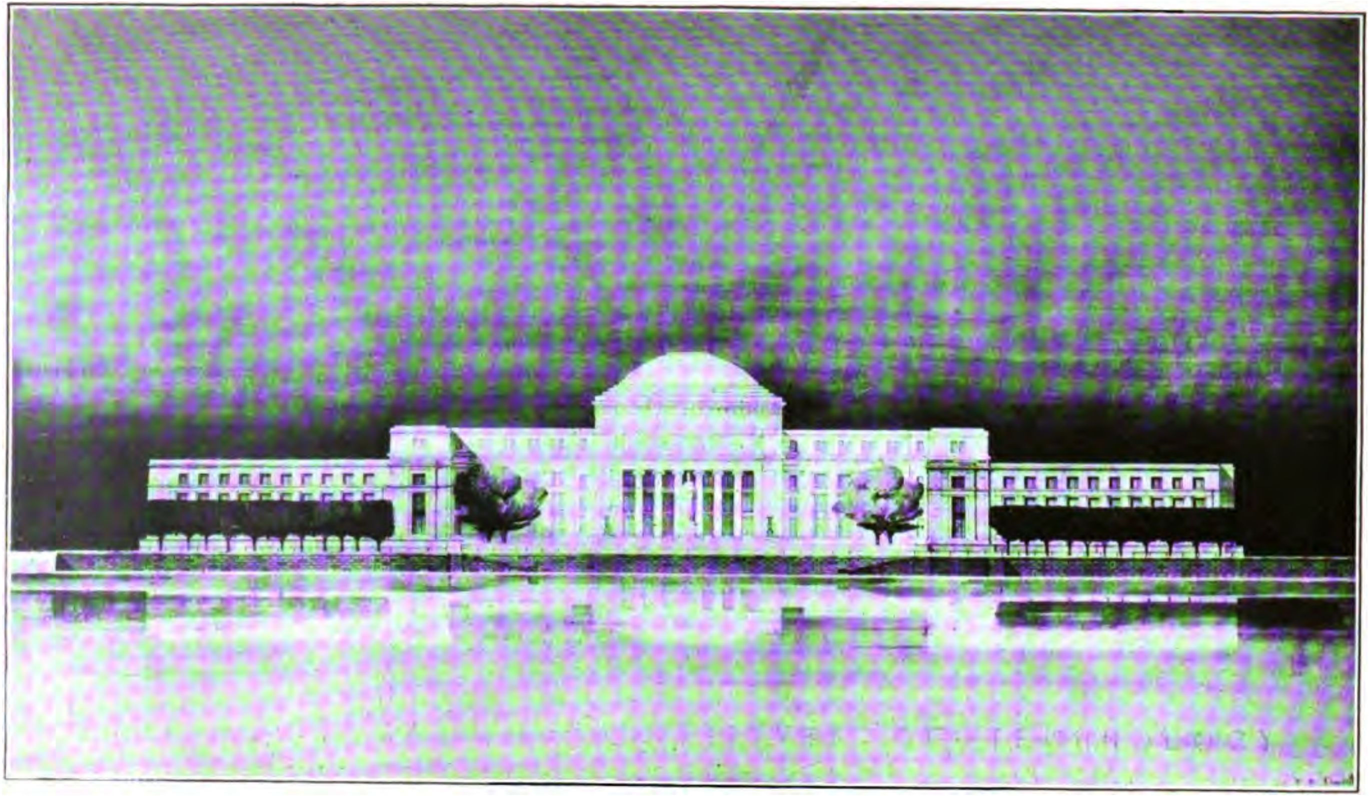
[41] See Sections VII and VIII.



LIBRARY, COLUMBIA UNIVERSITY, NEW YORK CITY.

A. HARVARD HALL, ONE OF THE OLDER COLLEGE BUILDINGS, HARVARD UNIVERSITY, CAMBRIDGE, MASS.

B. HARVARD COLLEGE "YARD," HARVARD UNIVERSITY, CAMBRIDGE, MASS.



NEW BUILDINGS OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASS.

VIEW OF THE BUILDINGS OF CORNELL UNIVERSITY, ITHACA, N. Y.

divorce of higher education and sectarianism, a tendency stimulated by the evident success of State universities. Consequently the sectarian affiliations of many colleges which started as strictly denominational institutions are all the time growing weaker. Some have even renounced their denominational connections and have frankly come forth as nonsectarian institutions. On the other hand, certain denominational colleges have, perhaps by way of protest, reaffirmed still more vigorously their denominational character. Several denominations also have been especially active in founding new institutions. Apparently the success of a college in maintaining a strong denominational bias depends in a large degree upon its location. As a rule such institutions flourish in the Middle West and South. The northeastern and far western sections of the country have shown themselves of late less hospitable to the rigidly sectarian principle in higher education.

The college is coming to be regarded more and more as a local institution. It serves a larger area than does a public high school, but still the radius from which it draws its students is comparatively short and is becoming annually shorter. This is a second reason for the large number of independent colleges. The number of persons securing college training in proportion to the total population[42] has recently increased enormously. There is consequently a growing demand for colleges within easy reach, at least of the centers of population.[43] This enables many students to live at home and save much of the expense of a college course. Others need travel but a few miles and are frequently in touch with parental influences.

A third reason for the persistent vitality of the independent college is the extraordinary influence it has had on the life and ideals of the Nation. The American college graduate generally cherishes the memory of his "alma mater" with a loyalty only second in intensity to that which he bestows on his family and friends. He is on all occasions her devoted and partisan champion. If he is an alumnus of a small college he is apt to attribute to its influence and training whatever measure of success he may have achieved. This generous habit, coupled with the fact that the independent colleges actually have furnished the country with a surprisingly—one might almost say a disproportionately—large number of the national leaders in politics, in the professions, and in commerce, has served to entrench the small college in the regard of the people. In many quarters it is believed to be the peculiar repository of healthy democracy, lofty ideals, and sound intellectual training. In consequence, it enjoys a prestige quite equal to that of the larger universities. Apparently it will long continue to do so.

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[42] In 1898, 1 in 827 went to college; in 1903, 1 in 638; in 1913, 1 in 321.

[43] A recent development is the municipal university, supported by the municipality, articulating with the city school system, and free to students of the city. New York, Cincinnati, and Akron, for example, have flourishing institutions of this type.

CHAPTER V.

HIGHER EDUCATION OF WOMEN.

Substantially all of the facilities for advanced and professional training which have been described above are available for women.[44] Women seldom select certain professions, such as agriculture and engineering, from the nature of the demands which these callings make upon physical strength. On the other hand, increasingly large numbers of women are engaging in law, medicine, dentistry, teaching, and pursuing advanced studies in the arts and sciences.

The higher education of women is carried on both in institutions for the female sex alone and in colleges and universities where the sexes are educated together. In the East coeducation, as it is called, has not found general favor. The older colleges and the college departments of universities in this section of the country are usually exclusively for men. Beside them numerous colleges for women have been established, offering courses leading to the bachelor's and, in some cases, even to the master's and doctor's degrees. In general, however, the older universities like Harvard, Yale, and the University of Pennsylvania, while excluding women from the undergraduate departments, admit them freely to graduate schools.

In the Middle West and West coeducation is the accepted educational policy. Nearly all colleges and universities are open in all departments to women on the same terms as to men. In particular, the State universities have been the most prominent exponents of this policy and have done much to give it national currency. Special supervision of the boarding and rooming accommodations of the women and a certain amount of chaperonage in social affairs are enforced. Otherwise perfectly free association between the sexes prevails. The policy of coeducation has proved almost universally successful and is now indorsed by the great majority of American educators.

"In addition to the coeducational and the separate method of the education of women has also grown up a method which has been denominated the coordinate system. It represents the affiliation of a college for women with a college for men."[45] Examples of this type of management are Barnard College, incorporated in the educational system of Columbia University; Radcliffe College, affiliated with Harvard; H. Sophie Newcomb Memorial College, affiliated with Tulane University of Louisiana; and the College for Women, affiliated with Western Reserve University. The academic relations of these colleges with the universities to which they are attached differ somewhat. Under one mode of affiliation the teaching in the woman's college is done by the faculty of the affiliated university. This plan prevails at Radcliffe. Another method is to provide an entirely separate faculty for the woman's college. This is the method of Western Reserve University.

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[44] The extent to which women have taken advantage of the higher educational opportunities is indicated by the following figures: Total enrollment of women in women's colleges, 1893, 12,300; 1903, 16,744; 1913, 19,142; 1916, 20,638. Total enrollment of women in coeducational institutions, 1893, 13,058; 1903, 26,990; 1913, 55,564; 1916, 69,543.

CHAPTER VI.

COMPARISON OF AMERICAN AND FOREIGN INSTITUTIONS.

It will probably help the foreign student to adjust himself to educational conditions in the United States if his attention is called to the correspondences and differences between the principal types of American schools, on the one hand, and familiar European and Latin-American institutions on the other. These may first be suggested by showing in parallel columns the ages at which students enter and finish the various courses. (See page 36.)

The most marked differences appear in the time allotted to secondary education and the ages at which it is begun in the countries mentioned. In fact, the position accorded the secondary school may be said to determine to a large extent the character of each country's educational system. In France and Germany the elementary and secondary school systems are entirely separate. They run along constantly diverging lines. It is only possible to transfer from the elementary to the secondary school at one or two points, and after the twelfth year not at all. To a certain extent the same conditions have prevailed in England also, although they have lately been somewhat modified. In all of these countries the elementary school has generally been regarded not as a place of preparation for the secondary school, but as furnishing a distinct and measurably complete scheme of education designed especially for the children of the laboring and artisan classes. The secondary school, on the other hand, is intended for children of prosperous parents who plan to fit themselves for the professions or to enter the civil service. The original and fundamental distinction between the two systems is a social one.

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[45] Quoted from Ch. V, Vol. I, Rept. Commis. of Ed. for 1903.

AGE OF ATTENDANCE AT VARIOUS SCHOOLS.

Germany.		France.		England.	
School.	Age of attendance.	School.	Age of attendance.	School.	Age of attendance.
Volksschule	6–14	École primaire	6–14	Elementary school	7–14
Gymnasium	9–18	Lycée or collège	10–18	Secondary school	10–18
Realgymnasium					
Oberrealschule					
University:		University:		University:	
Professions	18–$\begin{cases}21\\22\end{cases}$	Professions	18–22	Science and art	18–$\begin{cases}21\\22\end{cases}$
Philosophy		Philosophy			
Technical callings		Technical callings			

Latin America.		United States.	
School.	Age of attendance.	School.	Age of attendance.
Elementary school	6–12	Elementary school	6–14
Liceo	12–18	High school (secondary school)	14–18
University:		College and technical callings	18–22
Professions	18–$\begin{cases}21\\22\end{cases}$	University:	
Philosophy		Older professions and philosophy	$\left.\begin{matrix}20\\ \text{or}\\ 22\end{matrix}\right\}\left\{\begin{matrix}24\\ \text{or}\\ 26\end{matrix}\right.$
Technical callings			

The figure of "the educational ladder" best expresses the popular conception of education in the United States. The schools must be so organized that the child of the humblest parents may climb up in them and through them to the highest educational advantages. Anything else is felt to be undemocratic. The secondary school is therefore based on the elementary school and the college on the secondary school. This arrangement has had two consequences which are on the whole unfortunate. It has cramped the secondary school, and it has lengthened the whole school life of American boys and girls. Much work that is done by the French lycée or the German gymnasium is necessarily included here in the elementary school or the college.

The other outstanding peculiarity in the ~~United~~ States plan of educational organization, namely, the inclusion of the college as an extra link between the secondary school and the university, has been alluded to in the brief statement of the historical evolution of the college.[46]

The elementary schools of the United States and of Europe, notwithstanding minor differences, present nearly the same curriculum and aim at imparting approximately the same amount of training. The elementary school of Latin-American countries, like that of the United States and unlike those of Europe, is the regular preparatory institution for the secondary school or liceo. But the division line between the two institutions comes earlier in Latin America, at an age more appropriate for the beginning of secondary education. This, however, naturally reduces the range of the elementary curriculum.

European nations and Latin American countries are substantially agreed as to the purpose and compass of secondary instruction. The practices of no two countries are alike in all details, but in general the secondary course is made up of languages, ancient and modern; mathematics up to or through calculus; the elements of the natural sciences; history; the literature of the vernacular; the outlines of philosophy and logic. In other words, secondary education is conceived as properly dealing with knowledge which has general use and validity, scientifically arranged and organized to show the casual relations between facts or phenomena. It includes training in orderly and independent methods of study. It aims to sharpen the esthetic and moral perceptions. Secondary education concerns itself little with the purely empirical; that is more particularly the province of elementary training. It prepares for the philosophical or minutely specialized pursuit of knowledge, which is the field of higher education. The period of general cultural training of the individual properly terminates with the completion of the secondary school course, which is fittingly recognized by the bestowal of the bachelor's degree. The six, eight, or nine years of secondary instruction in the countries mentioned are held to be sufficient for the accomplishment of this general purpose.

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[46] See p. 11.

The function which is fulfilled in France, Germany, and Latin America by the secondary school is shared in the United States by two institutions—the secondary school and the college. It is generally admitted that the American student who has completed a secondary school course and two years of a general course in arts or sciences at an American college may be ranked with the holder of the baccalaureate of the French lycée or the Abiturientenzeugnis of the German Gymnasium. Those professional schools which demand two years of collegiate study for entrance maintain approximately the same standards of entrance, then, as the French and German universities, which are only open to holders of the two certificates just mentioned.

SECTION II.

CHAPTER I.

LIVING CONDITIONS.

Most of the larger universities are located in or near cities of considerable size. For instance, the University of California, at Berkeley, a city of 56,036[47] inhabitants, is only 8 miles from San Francisco; the University of Minnesota is at Minneapolis, a city of 380,582[47] inhabitants; the University of Wisconsin, at Madison, a city of 38,378[48] inhabitants. Within the limits of the metropolitan district of each of the great centers, Chicago, New York, Philadelphia, St. Louis, Boston, New Orleans, Baltimore, Washington, are several universities and colleges. The work of certain professional schools, in particular schools of medicine and dentistry, can hardly be successfully carried on without the facilities afforded by a large city. It is in recognition of this fact that the medical schools of the Universities of Illinois and Cornell have been established at Chicago and New York, respectively.

On the other hand, quite the majority of small colleges and independent professional institutions are located in villages and towns of from 1,000 to 20,000 inhabitants. In many cases the founders have deliberately chosen small communities in order that students might be removed from the temptations of the city and might be encouraged to live a simple, healthy life, in contact with nature. The large city and the small rural or quasi rural community each has its own peculiar advantages. The great centers of population mentioned above[49] are also centers of art and forums for the exchange of ideas. Collections of paintings and of sculpture, concerts, theaters, museums, lectures, public meetings devoted to the discussion of political and economic problems may thus be legitimately included among the instrumentalities for education and self-improvement which the city university affords. The small town or village in return allows a more vigorous development and the closer welding together of the institutional community itself. "College life," so characteristic a feature of American higher institutions, flourishes especially in the country college.

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[47] Figures of 1913.

[48] Figures of 1910.

[49] See also Sec. II, Ch. III, p. 49 et seq.

EXPENSES.

The expenses of foreign students attending American institutions will vary widely for several reasons. Practically all of the privately endowed institutions charge annual tuition fees. The fee is rarely less than $50 a year for collegiate instruction, and in some cases as high as $150 or $200 a year. For example, Parsons College and Bowdoin College charge tuition fees of $50 and $125, respectively. Columbia University charges $196 and Princeton University $200.[50] Professional instruction, particularly in medicine and engineering, is still more expensive. The annual tuition at Johns Hopkins University medical school is $250, for instance, as against $150 charged to collegiate students. Case School of Applied Science charges $125 a year; Massachusetts Institute of Technology charges $250 a year, and to its students in naval construction and naval architecture $500 a year.

Most State-aided institutions, on the other hand, charge only a small tuition fee to collegiate students not residents of the State, State residents being generally given instruction free of charge. But State institutions usually charge a considerable fee to students in some branches of professional study, because of the costly equipment needed for work in these departments. The practice of the University of Colorado, where the tuition fee to college students is $24 and the annual cost to the student in the medical school is $120, will serve as an illustration. In addition to tuition fees most institutions, both private and State aided, charge laboratory fees and various incidental fees. These rarely total more than $25 a year.

Living expenses, aside from tuition and other fees, vary with the location of the institution. Practically all the colleges and universites which are located in rural communities or in small towns maintain dormitories and dining halls, which generally assure the student of good boarding and rooming accommodations at a minimum rate. Dormitories and dining halls are also provided by certain city universities; for example, Yale and the University of Pennsylvania. Dormitories are commonly arranged so that two students share the same suite of two or three rooms, a study room and one or two bedrooms. Some dormitories, especially the older ones, contain chiefly single rooms, each serving as bedroom and study combined and designed for a single occupant. Where the institution has no dormitories, as is the case with the University of Michigan and the University of Illinois, an abundance of rooms are available in the houses of reputable private families. As a rule, the fundamental charges—room, board, and laundry—are somewhat lower at the country institution than at those located in the cities. The possible wide variations in price (which do not altogether depend upon the size of the community) are indicated by the figure, $6, quoted as the weekly minimum by the University of Minnesota, and $12, the weekly maximum mentioned by Cornell University. The incidental expenses of city living, including amusements, should, of course, also be reckoned.[51] These vary with the tastes and standards of the individual, but even the most ascetic student will spend a little more in an urban than in a rural community.

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[50] For information concerning tuition at other institutions, see Sec. VI.

VACATIONS AND TRAVEL.

The foreign student contemplating a three or four year period of university study in the United States should make allowance in his budget for the long vacations. American colleges and universities are in session on an average about eight months in the year. The university year generally begins about the middle of September and closes about the middle of June.[52] At most institutions it is divided into two semesters, the division line coming about the 1st of February.[53] Approximately a month is devoted to short vacations of from 1 to 14 days duration, scattered through the academic year. The prices quoted by different institutions for the rent of dormitory rooms are generally for the academic year of nine months. Occupancy of the rooms during the short vacations is included. Students are usually not allowed to occupy dormitory rooms in the long summer vacation.

It is exceedingly desirable that the foreign student should spend part of the long vacation in travel if he can possibly afford this extra expense. The United States is so large a country; it contains so great a diversity of racial stocks, many of them concentrated in certain limited areas; its industries, climate, and conditions of living are so infinitely varied that no single community can be regarded as typical. Not the least advantage to a foreign student pursuing his university work here will be the opportunity to observe the people and the customs of an alien nation. He should therefore strive to extend his observations as widely as possible. Railroad travel costs on the average 3 cents a mile; a seat in an individual chair car, called a "Pullman" car, costs approximately one-half a cent a mile extra. A berth in a sleeping car costs about 1 cent a mile extra. Good hotel accommodations may be had—depending upon the place—from $3.50 a day, including meals, up. For a longer sojourn in city communities, good board and room may be secured at rates ranging from $10 a week up. In the country one may occasionally find satisfactory board and lodging for less.

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[51] For estimates of the minimum total annual cost of attending the institutions described in this bulletin see the end of each description in Sec. VI. These estimates do not include incidentals.

[52] California institutions present an exception to this rule, the academic year there extending from the middle of August to the middle of May.

[53] It is now possible to enter almost any of the larger universities, and many colleges as well, at the beginning of either semester. Several institutions have two graduations, one in June and one in February. Classes, laboratory instruction, and courses of lectures are now usually arranged on the semester basis.

STUDENT AID AND SELF-HELP.

Nearly all the better-equipped private institutions and some State institutions possess special funds for assisting needy and deserving students. The commonest form of student aid is the so-called "scholarship," an annual stipend, generally large enough to cover the tuition fee, often somewhat larger, which is granted a student of good ability and character upon the representation of his needs. Some scholarships are awarded as prizes for high scholastic standing without reference to the student's financial status. Some, again, are bestowed only upon those students who have demonstrated marked capacity and are also known to need pecuniary assistance.

Certain institutions have loan funds from which money is lent indigent students on proper security.

Larger stipends, called "fellowships," paying from $150 to $500 or $600 a year, have been established at many universities for the benefit of graduate and professional students of unusual ability and promise. Certain of these fellowships for students in graduate schools carry the obligation of teaching from one to six hours a week in undergraduate classes.[54] A few universities also maintain traveling fellowships, some of which pay as much as $1,500 per annum. These are generally awarded to advanced students whose researches will be especially furthered by visiting some foreign country.

The foreign student is advised to apply for the catalogue of any American college or university to which he may feel attracted. The catalogue or a circular of information is sent free upon request, and generally contains full information concerning scholarships, fellowships, courses, teaching staff, and equipment.

A very large percentage of American students support themselves wholly or in part during their terms of collegiate or professional training. In the long summer vacations, in the evenings, in the spare hours not occupied with class exercises, these young men and women work at a multitude of occupations. The commonest of these are perhaps the following: Care of furnaces in private residences; janitor service in college or university buildings; waiting on table in college dining halls and eating clubs; clerical work for college officers; giving private lessons; selling commodities on commission. Some students have learned a trade before attending higher institutions, and by the occasional practice of it are able to assist themselves financially.

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[54] For example, the Austin teaching fellowships at Harvard University, holders of which receive $500 and are expected to devote about half of their time to teaching; also the Harrison senior fellowships at the University of Pennsylvania, holders of which receive $800 and are expected to offer a single course of lectures.

Nearly all the larger institutions and many of the small colleges maintain student employment bureaus. The purpose of these agencies is to ascertain the local opportunities for student labor and to put the student seeking employment in touch with a suitable occupation.

The American college or university community does not regard any of the occupations mentioned or any other form of honest manual labor on the part of students as degrading. This fact deserves especial emphasis, because in certain other countries there is quite a different attitude toward students who are obliged to work their way through college or who are recipients of scholarships, bursaries, or loans. The American student who earns his way suffers no loss of social standing. He is eligible for any social honor bestowed by his fellows, on the same terms as the son of the wealthiest parent. Indeed, the fact that a popular or talented young man waits on the table, for instance, in order to make his education possible, generally raises him in the esteem both of his fellow students and of his instructors.

Many students from other countries have taken advantage of the manifold opportunities for self-help and have thus eked out the money needed for a long and expensive university education. No discrimination in favor of native students is shown either by the employers or by the university employment agencies. However, the foreign student contemplating a course of study in the United States should be warned to bring with him enough money to defray the expenses of the first year. Before he can count on remunerative employment, he must be acquainted with the customs of the country and must be known to the officers of the institution at which he is enrolled.

CHAPTER II.

COLLEGE LIFE.

American educators are practically unanimous in the belief that the associations which the student forms with his fellows and the activities with which he fills his leisure hours are educative factors hardly less important than the instructional work of the institution. Especially is this true in the college and the collegiate divisions of the universities. Students in the professional and graduate schools, thoroughly absorbed in preparing themselves for the practice of their professions, are likely to have less time and inclination to cultivate other interests. Encouraged by the governing authorities, there has grown up at most American colleges and universities a kind of institutional life which is distinctly national. There is, to be sure, a certain generic similarity in the ideals and interests of students the world over, which manifests itself in similar ways. Yet American "college life," as it is called, exhibits many customs and activities that seem to be entirely unlike those of European and Latin American students. To this extent it is unique and deserves brief notice. The foreign observer is perhaps first struck by the complexity and intensity of college life. The work of the classroom or the laboratory seems to be merely the focus for numerous other occupations, all pursued with a passionate earnestness.

ATHLETICS.

Chief among the extra-curricular activities is athletics, which occupies a shrine of its own not only in the hearts of college and university students but in the hearts of the whole American people. Athletic sports are of comparatively recent development. They began within the memory of men still alive. It is only within a little more than a generation that Americans have ceased to find ample scope for physical activity in the fields to be tilled, the woods to be cleared or explored, and the forces of the land to be subdued. It is the sudden urbanization of the United States that has stimulated the growth of athletic games. The city youth replaces by strenuous group sports the excitements and exertions of his pioneering fathers and grandfathers. The urban public participates vicariously and is boisterously enthusiastic over athletic exhibitions. Both the college community and the country at large are prone to make a hero of the successful college athlete. These are social phenomena of considerable significance in American life. They partly account for the large share of the college student's attention which athletics claim and for the prominence of athletic interests in most college communities.

Nearly every college and university maintains four types of athletic teams which compete with the teams of other institutions—baseball teams, football teams, basketball teams, and track teams. Track athletics, as it is called, includes running, jumping, weight throwing, etc. In addition, most of the larger institutions situated near bodies of water maintain crews for boat racing. Numerous other branches of athletics, such as hockey, fencing, tennis, etc., are cultivated at certain universities. But the interest of the general public, and of the college or university community as well, is chiefly centered in the four sports first mentioned, particularly the first two. Baseball in the spring and football in the fall make a special appeal to all ages and classes of Americans.

College and university athletic teams are trained with great care and often at great expense. It is customary for institutions to employ a special trainer called a "coach" for each of the principal branches of athletics. The larger and wealthier institutions build costly gymnasia and training quarters and construct stadia for the public games. To be chosen to represent his institution on one of its important athletic teams is regarded by the college or university student as one of the most desirable distinctions to which he can attain. For many years it far outclassed scholarly distinctions in student estimation and in the estimation of the general public as well. Of late scholarship has been receiving more appropriate recognition, both within and without the walls. But the prestige of athletic success is still undimmed. The intercollegiate games of baseball and football are played before vast and enthusiastic crowds who are willing to pay large sums of money for the privilege of watching the spectacle. Indeed, a football game between Harvard and Yale, for example, is an event of national interest. The last one, in 1914, was played before an audience of 68,000 people, in a new amphitheater erected especially for these contests at a cost of approximately $600,000. The gate receipts were $136,000. Crowds only slightly smaller assemble for the games between the teams of other universities. The conspicuous athlete on one of these occasions acquires a publicity that, although short-lived, is for the time only matched, perhaps, by that of the favorites of the stage.

All of these influences naturally combine to make nearly every able-bodied young man strive for athletic distinction. Moreover, the absorbing devotion to athletic success has created an ideal of physical fitness which pervades practically all college and university communities and affects the lives of those who are unable to win fame in the arena. To be in good physical condition and to participate as far as possible in some kind of athletic contest have come to be among the normal ends which almost every student sets himself to reach. What has been said with regard to the devotion of men to athletic sports holds true also, with only slight modifications, with regard to college women. Less publicity and strain attend the athletic contests of women students, but the athletic ideal has conquered the colleges for women as well as the colleges for men.

The prominence of the athletic interest among the students has led to the incorporation of systematic physical training in the college curriculum. Most progressive institutions now require every candidate for the bachelor's degree to undergo periodic physical examinations at the hands of a physician and to take a course of physical training under the direction of a competent physical instructor. The conservation of health and the promotion of a sound physical development are thus made fundamental to effective intellectual training.

FRATERNITIES.

Next to athletics the most vital and generally influential factors in college or university life are the fraternities and clubs. Whereas athletics is a democratizing force bringing together the rich and the poor, the well-bred and the uncultivated, in sharp personal competition, or uniting them in a common enthusiasm, the fraternities and clubs tend to break the student body into cliques, on the basis of similarity of tastes, the pursuit of a particular object, or social compatibility. They represent the natural cleavages of large bodies of people into smaller congenial groups.

The American college fraternity, like the "college life" of which it is the outgrowth and the expression, has no exact counterpart in any other country. The student corps at German universities resemble it in certain features, but on the whole are quite different. The typical college fraternity is a secret order of strictly limited membership, having a Greek motto and conducting more or less mysterious rites of initiation. The fraternity is known by the initial letters of its motto (or what are taken to be such by the uninitiated public), as, for instance, Psi Upsilon, Delta Kappa Epsilon, Phi Delta Theta, Sigma Chi.

A great many fraternities are national, or at least interinstitutional. They consist of from a dozen to 50 chapters located in as many institutions in different parts of the country. So-called national fraternities generally have a central administrative body, made up wholly or partly of older men, whose duty it is to coordinate the activities and help in maintaining the standards of the fraternity. The individual chapters of a fraternity generally consist of from 15 to 30 members. At most institutions each fraternity has a clubhouse. These clubhouses vary in size, comfort, and elegance. Some are modest domiciles containing simple meeting rooms; others combine under one roof—often a very expensive roof, at that—a dormitory, meeting room, and boarding house. All, or nearly all, of the members then live in the fraternity house en famille. Under these circumstances it is natural that the fraternity should become a formative influence in a young man's character second to no other. On the whole, this influence is good. Most fraternities, like the orders of knighthood from which through Masonic associations they probably took their origin, set before themselves the pursuit of high and noble ideals. The older members feel responsibility for maintaining both the scholarly standing and the good repute of the organization, and, indeed, frequently cooperate with the faculty to this end.

A few fraternities or individual chapters have fallen into overluxurious and vicious habits, in which cases they have become peculiarly dangerous to the young men who join them. These are, however, the exception. The principal objection raised against the fraternity is the disintegrating effect which its close organization and interfraternity rivalries may have upon the solidarity of the college community. But this objection has not been strongly enough voiced to check as yet the growth and spread of fraternities.

Local secret orders without affiliation with other societies are also common at certain institutions. These are in all essential respects like the national fraternities just described. At a few of the most prominent universities secret fraternities, local or national, are either rare or nonexistent. For instance, at Princeton secret societies are prohibited. At Harvard the vigorous development of other types of social organizations has kept fraternities from becoming numerous or important. At these universities and at others where similar conditions prevail the place of fraternities is taken by social clubs which parallel in the variety of the purposes which they pursue the clubs of the outside world.

As a rule fraternities and other societies welcome congenial foreign members of similar social training. Of particular interest to foreign students, however, are the cosmopolitan clubs which exist at most universities and which are now united by means of a national organization. These associations bring together upon a common ground of social intercourse the citizens of every country represented in the student body of the university.

Besides social clubs there are at practically all colleges and universities other clubs organized for special purposes; for instance, debating, dramatic, and musical clubs—Cercle Français, etc. There are also professional and technical associations, such as engineering clubs, chemical clubs, and law clubs, to which students of the professional schools belong.

The musical organizations of the majority of colleges and universities are partly social clubs for the cultivation of an art and partly money-making ventures. University choral societies, glee clubs, mandolin clubs, and orchestras travel about the country in the vacation periods and at other times, as far as the work of the institution permits, giving public concerts. These are often sources of considerable profit to the members of the organizations.

RELIGIOUS ORGANIZATIONS.

At nearly all American higher institutions, including the State universities, the religious life of the student body is a matter of deep concern to the faculty and to the older students. The officers of the strictly denominational colleges usually undertake, more or less openly, the direction of the religious thought and observances of the students, in accordance with the doctrines and ritual of the sect to which the college owes allegiance. State universities are of necessity nonsectarian, and their officers never interfere with the religious affairs of the students. The larger independent universities also, even though founded by religious bodies, have for the most part outgrown sectarian limitations. The daily chapel exercises, which are held at nearly all American universities, both State and independent, are at these larger universities devoid of doctrinal content. Attendance is now generally optional.

The religious life of the students of these larger American universities is stimulated and fed by means of religious organizations for which the students themselves are chiefly responsible. The most widespread and influential of these bodies is the Young Men's Christian Association, branches of which are to be found in almost all Protestant and nonsectarian universities and colleges. In nonsectarian institutions, also, the Young Men's Catholic Association, the Intercollegiate Menorah Society, the Knights of St. Andrew, and other religious organizations, membership in which is limited to the adherents of particular sects, are frequently established.

UNIVERSITY DEMOCRACY.

Doubtless the most characteristic feature of the American college or university community is its democracy. A spirit of good comradeship in work and play pervades the typical college. No barriers are raised between groups or individuals because of wealth or family connections. A student stands or falls on the strength of his own attainments and personal likeableness. Cliques represented by the clubs and fraternities just mentioned are formed within the college itself, to be sure, but they seldom bear any relation to outside social alignments. The most influential and exclusive college fraternity may include in its membership sons of parents of every grade of wealth and every calling. Indeed, the typical American college community rather makes a cult of democracy, and since it is saturated with the idealism of youth and is more homogeneous than any other community it is able to practice democracy with comparatively little hardship.

For the most part the same informal relations exist between students and professors as among the students themselves. Few professors now assume superiority in their dealings with students or demand special deference on the strength of their position. The American university professor of to-day regards himself as a fellow student with those whom he teaches, a little older and more experienced, but essentially on the same plane. The relations between professors and students, then, are like those between younger and older men elsewhere. This condition contributes to a better mutual understanding, a more complete harmony of purpose in the university community than used to prevail in the past. It has minimized, also, the need for disciplinary action on the part of the faculty.

THE FOREIGNER AT AN AMERICAN UNIVERSITY.

It is essential that the foreign student who contemplates studying at an American college or university should first be fairly fluent in the use of English. He should at least know the language well enough to be able to read it and to follow lectures given in it. If he does not have this knowledge when he arrives in the United States, it will probably be best for him to spend several months (three or four should suffice) studying English[55] under competent instruction before attempting to register in a university for either a general or professional course.

Once having mastered the vernacular sufficiently to make his way as a student and to take an intelligent part in the social activities of the university community, the foreign student will find himself accepted as in every sense a full-fledged member of the institution.[56] Then it rests with him what his place shall be. If he is agreeable, capable, and adaptable, he will suffer no handicaps in his relations with the natives. On the contrary, he will receive a most cordial welcome.

CHAPTER III.

HIGHER EDUCATIONAL CENTERS, DISTANCES FROM THE PORTS OF ENTRY, AND COST OF TRAVEL.

In a preceding chapter[57] reference was made to the extra-academic advantages to be found in the larger American cities. These cities are also foci for numbers of higher educational institutions. There is in many cases a certain amount of reciprocity between the various institutions. Aside from the cultural advantages, therefore, the larger cities of the United States have distinct advantages as centers of professional training. In the following paragraphs the principal metropolitan centers are mentioned. The institutions of collegiate or professional grade located in them are given and the distances from the three principal ports of entry. As noted in Chapter II, the cost of travel is, in the average, about 3.6 cents a mile for railroad fares. An additional cent and a half per mile should be added for first-class Pullman accommodations.

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[55] See p. 27. Summer school.

[56] There are certain exceptions to the statement made above. In the Southern States persons of Negro blood attend exclusively the schools which have been established for their race.

[57] See p. 39.

NEW YORK CITY.

New York City, the largest American city, with a population of 5,621,151, is the seat of the following collegiate institutions and universities:

- Columbia University:
  - Columbia College, arts and science (for men), nonsectarian.
  - Barnard College, arts and science (for women), nonsectarian.
  - School of Law (for men).
  - College of Physicians and Surgeons (for men).
  - Schools of Mines, Engineering, and Chemistry (for men).
  - Graduate Faculties—Philosophy, Political Science, and Pure Science (coeducational).
  - Faculty of Fine Arts—Architecture, Music, and Design (coeducational).
  - College of Pharmacy (coeducational).
  - School of Journalism (coeducational).
  - School of Business (coeducational).
  - Teachers College (coeducational)—
    - School of Education.
    - School of Practical Arts.
- College of the City of New York, arts and science, engineering (for men), under municipal control.
- Fordham University (for men), under Roman Catholic control:
  - St. John's College, arts and science.
  - School of Law.
  - School of Pharmacy.
- Hunter College of the City of New York, liberal arts (for women), under municipal control.
- Manhattan College, arts and science, engineering (for men), under Roman Catholic control.
- New York University (coeducational), nonsectarian:
  - College of Arts and Pure Science.
  - School of Applied Science.
  - Washington Square College (offers afternoon and evening courses equivalent to courses in the university college).
  - Graduate School.
  - School of Law.
  - University and Bellevue Hospital Medical College.
  - School of Commerce, Accounts, and Finance.
  - New York-American Veterinary College.
  - School of Pedagogy.

Bible Teachers' Training School (interdenominational).
General Theological Seminary of the Protestant Episcopal Church.
Jewish Theological Seminary.
Union Theological Seminary (interdenominational).
New York Law School.
Cornell University Medical College.
New York Homeopathic Medical College and Flower Hospital.
College of Dental and Oral Surgery of New York.
New York College of Dentistry.

New York is itself the principal port of entry for all persons coming from Europe and from certain portions of South America and the West Indies. It is 3,183 miles from San Francisco and 1,344 miles from New Orleans.

CHICAGO, ILL.

Chicago, the second city in the United States, with a population of 2,701,705, is also a great educational center. The following universities and colleges are located there:

Armour Institute of Technology (for men), nonsectarian; undergraduate and graduate departments.
De Paul University (for men), under Roman Catholic control:
    College of Liberal Arts and Sciences.
    College of Engineering (first two years).
    College of Law.
    College of Commerce.
    College of Music.
Lewis Institute, liberal and practical arts, engineering (coeducational), nonsectarian.
Loyola University (for men), under Roman Catholic control:
    College of Arts and Sciences.
    Department of Law.
    School of Medicine.
    School of Sociology.
    Engineering Department (first two years).
University of Chicago (coeducational), nonsectarian:
    Schools and Colleges of Arts, Literature, and Science.
    Graduate schools—
        School of Arts and Literature.
        Ogden School of Science.
    University College (afternoon, evening, and Saturday courses equivalent to those in the regular colleges).
    Divinity School (Baptist).
    Law School.
    Rush Medical College.
    School of Education.
    College of Commerce and Administration—
        College of Religious and Social Sciences.
Northwestern University (located in Evanston, a suburb of Chicago), coeducational), under Methodist Episcopal control:
    College of Liberal Arts.
    Graduate School.

Northwestern University, etc.—Continued.
  College of Engineering.
  Medical School.
  School of Pharmacy.
  Union College of Law.
  Dental School.
  School of Commerce.
  School of Music.
  School of Oratory.
  Garrett Biblical Institute (Methodist Episcopal).
  Norwegian-Danish Theological Seminary (Methodist Episcopal).
  Swedish Methodist Episcopal Theological Seminary.
Bethany Bible School (Christian Brethren).
Central States College of Pharmacy.
Chicago Theological Seminary (Congregationalist).
Evangelical Lutheran Theological Seminary (at Maywood).
McCormick Theological Seminary (Presbyterian).
Western Theological Seminary (Protestant Episcopal).
Chicago College of Law.
Chicago-Kent Law School.
Hamilton College of Law.
John Marshall Law School.
College of Medicine of the University of Illinois.
Hahnemann Medical College.
Jenner Medical College.
Chicago College of Dental Surgery of Valparaiso University.
College of Dentistry of the University of Illinois.
School of Pharmacy of the University of Illinois.
Chicago Veterinary College.
McKillip Veterinary College.

Chicago is 960 miles from New York, 2,280 miles from San Francisco, and 930 miles from New Orleans.

PHILADELPHIA, PA.

The following colleges and universities are located in the city of Philadelphia, third in size among American cities, with a population of 1,823,158:

Drexel Institute (coeducational), nonsectarian:
  School of Domestic Science and Arts.
  School of Engineering.
  Secretarial School.
Dropsie College, a graduate school for Hebrew and cognate learning (coeducational), under Jewish control.
La Salle College (for men), under Roman Catholic control:
  Department of Arts.
  Department of Civil Engineering.
Temple University (coeducational), nonsectarian:
  College of Liberal Arts and Sciences.
  Department of Theology (nonsectarian).
  School of Law.
  Department of Medicine.
  Teachers College.

Temple University (coeducational), nonsectarian—Continued.
  - Department of Pharmacy.
  - Philadelphia Dental College.
  - Department of Commerce, Accounts, and Finance.
  - College of Music.
  - Training School for Nurses.

University of Pennsylvania (for men except as noted), nonsectarian:
  - The College—
    - School of Arts.
    - Towne Scientific School.
  - Wharton School of Finance and Commerce.
  - School of Education (coeducational).
  - Graduate School (coeducational).
  - Law School.
  - School of Medicine (coeducational).
  - Graduate School of Medicine (coeducational).
  - School of Dentistry (coeducational).
  - School of Veterinary Medicine.

Bryn Mawr College (at Bryn Mawr, a suburb of Philadelphia), liberal arts (for women), nonsectarian:
  - Undergraduate and Graduate Departments.

Haverford College (at Haverford, a suburb of Philadelphia), arts and science (for men), under Friends' control.

Swarthmore College (at Swarthmore, a suburb of Philadelphia), liberal arts (coeducational), nonsectarian.

Lutheran Theological Seminary (at Mount Airy).

Protestant Episcopal Church Divinity School.

St. Vincent's Seminary (Roman Catholic).

Jefferson Medical College.

Woman's Medical College of Pennsylvania.

Philadelphia Dental College.

Philadelphia College of Pharmacy.

Philadelphia is 90 miles from New York, 3,098 miles from San Francisco, and 1,254 miles from New Orleans.

ST. LOUIS, MO.

St. Louis, the great metropolitan center of the midsouthern section of the United States, a city of 772,897 population, contains the following collegiate institutions and universities:

St. Louis University (for men), under Roman Catholic control:
  - College of Arts and Sciences.
  - School of Divinity.
  - School of Philosophy and Science.
  - School of Medicine.
  - St. Louis College of Dentistry.
  - Institute of Law.
  - School of Commerce and Finance.

Washington University (coeducational), nonsectarian:
  - Department of Arts and Sciences—
    - The College.
    - School of Engineering.
    - School of Architecture.

Washington University (coeducational), nonsectarian—Continued.
  Henry Shaw School of Botany.
  Law School.
  Medical School.
  Dental School.
  St. Louis School of Fine Arts.
  School of Commerce and Finance.
Concordia Theological Seminary (Evangelical Lutheran).
Eden Theological Seminary of the Evangelical Church of North America.
Kendrick Theological Seminary (Roman Catholic).
Benton College of Law.
City College of Law and Finance.
St. Louis College of Physicians and Surgeons.
St. Louis College of Pharmacy.

St. Louis is 1,127 miles from New York, 2,294 miles from San Francisco, and 717 miles from New Orleans.

BOSTON, MASS.

Boston, the seventh city in the United States, with a population of 748,060, is, with its suburbs, one of the principal educational centers. These colleges, universities, and technological schools are located either in the city itself or in the immediate vicinity:

Boston College (at Chestnut Hill, a suburb of Boston), liberal arts (for men), under Roman Catholic control.
Boston University (coeducational), under Methodist Episcopal control:
  College of Liberal Arts.
  College of Business Administration.
  School of Theology (Methodist Episcopal).
  School of Law.
  School of Medicine (homeopathic).
  Graduate School.
Northeastern College (for men), under Y. M. C. A. control:
  School of Liberal Arts.
  School of Engineering.
  School of Commerce and Finance.
  School of Law.
Harvard University, Cambridge (for men), nonsectarian:
  Harvard College, arts and sciences.
  Graduate School of Arts and Sciences.
  Graduate School of Applied Science.
  School of Engineering.
  Mining School.
  School of Architecture.
  School of Landscape Architecture.
  School of Forestry.
  School of Applied Biology.
  Graduate School of Business Administration.
  Divinity School (nonsectarian).
  Law School.
  Medical School.
  Dental School.
  Graduate School of Medicine.

Radcliffe College (affiliated with Harvard University), arts and science (for women), nonsectarian: Undergraduate and graduate departments.

Massachusetts Institute of Technology, Cambridge (coeducational), nonsectarian:
  Undergraduate and graduate departments.
  School for Health Officers.

Simmons College, scientific courses (for women), nonsectarian.

Tufts College, Medford (coeducational), nonsectarian:
  School of Liberal Arts.
  Engineering School.
  Medical School.
  Graduate School.
  Dental School.
  Crane Theological School (Universalist).
  Jackson College for Women.

Wellesley College, Wellesley, liberal arts (for women), nonsectarian.

Andover Theological Seminary, Cambridge (Congregationalist).

Episcopal Theological Seminary, Cambridge.

New Church Theological School (Church of New Jerusalem).

Newton Theological Institution, Newton (Baptist).

St. John's Boston Ecclesiastical Seminary (Roman Catholic).

Portia Law School.

Suffolk School of Law.

Massachusetts College of Pharmacy.

Boston is 232 miles from New York, 3,312 miles from San Francisco, and 1,576 miles from New Orleans.

BALTIMORE, MD.

Baltimore, a city of 733,826 inhabitants, is the seat of the following universities and colleges:

Goucher College, liberal arts (for women), under Methodist Episcopal control.

Johns Hopkins University (coeducational), nonsectarian.
  Faculty of Philosophy (undergraduate and graduate departments of arts and sciences).
  Faculty of Medicine.
  Faculty of Hygiene and Public Health.
  Department of Engineering.

Loyola College, liberal arts (for men), under Roman Catholic control.

Morgan College (colored), liberal arts (coeducational), under Methodist Episcopal control.

Mount St. Joseph's College, liberal arts (for men), under Roman Catholic control.

St. Mary's Seminary (Roman Catholic theological school).

Baltimore Law School.

University of Maryland Law School.

University of Maryland School of Medicine and College of Physicians and Surgeons.

Baltimore College of Dental Surgery.

University of Maryland Dental Department.

Maryland College of Pharmacy of the University of Maryland.

Baltimore is 185 miles from New York, 3,076 miles from San Francisco, and 1,158 miles from New Orleans.

SAN FRANCISCO, CALIF.

San Francisco, a city of 506,676 inhabitants and one of the chief ports of entry, is the principal educational center of the Pacific coast. In the city itself and its close vicinity are located—

- Leland Stanford Junior University (coeducational), nonsectarian:
  - Arts and Sciences—
    - Undergraduate.
    - Graduate.
  - Department of Engineering.
  - School of Education.
  - Department of Medicine.
  - Law School.
- St. Ignatius University (for men), under Roman Catholic control:
  - College of Letters, Science, and Philosophy.
  - College of Law.
- University of California (coeducational), under State control:
  - College of Letters and Science.
  - College of Commerce.
  - College of Agriculture.
  - College of Mechanics.
  - College of Mining.
  - College of Civil Engineering.
  - College of Chemistry.
  - College of Medicine (graduate department at Los Angeles).
  - College of Dentistry.
  - School of Architecture.
  - School of Education.
  - School of Jurisprudence.
  - Graduate School.
  - Hastings College of Law.
  - California College of Pharmacy.
- Pacific Coast Baptist Theological Seminary.
- Pacific Theological Seminary (undenominational).
- Pacific Unitarian School for the Ministry.
- San Francisco Law School.
- College of Physicians and Surgeons:
  - Department of Dentistry.
  - Department of Pharmacy.
- San Francisco Veterinary College.

San Francisco is 3,183 miles from New York and 2,477 miles from New Orleans.

NEW ORLEANS, LA.

New Orleans, the principal seaport of the Gulf States, a city of 387,219 inhabitants, contains the following collegiate institutions and universities:

Loyola University (for men), under Roman Catholic control:
  College of Arts and Sciences.
  College of Pharmacy.
New Orleans University (colored) (coeducational), under Methodist Episcopal control.
Tulane University of Louisiana (for men), nonsectarian:
  College of Arts and Sciences.
  College of Technology.
  Graduate Department.
  College of Commerce and Business Administration.
  College of Medicine.
  School of Pharmacy.
  School of Dentistry.
  School of Hygiene and Tropical Medicine.
  Postgraduate School of Medicine.
  College of Law.
H. Sophie Newcomb Memorial College (affiliated with Tulane University of Louisiana) (for women), nonsectarian:
  School of Art.
  School of Music.
  School of Education.
New Orleans College of Pharmacy.

New Orleans is 1,344 miles from New York and 2,477 miles from San Francisco.

WASHINGTON, D. C

Besides being the capital of the country, and hence of peculiar interest to visitors from other nations, Washington, a city of 437,571 inhabitants, is also one of the leading educational centers. University and college education are furnished by:

American University, graduate school of arts and sciences (coeducational), under Methodist Episcopal control.
Catholic University of America (for men), under Roman Catholic control:
  School of Letters.
  School of Law.
  School of Philosophy.
  Department of Education.
  School of Sacred Sciences (Roman Catholic).
  School of Sciences.
  Graduate Departments.
Catholic Sisters College (affiliated with the Catholic University of America), liberal arts (for the sisterhood) under Roman Catholic control.
Trinity College (affiliated with the Catholic University of America), liberal arts (for women), under Roman Catholic control.
Gallaudet College (for the deaf), liberal arts and sciences (coeducational), under national control.
Georgetown University (for men), under Roman Catholic control:
  Georgetown College, arts and science.
  School of Medicine.
  Dental School.
  School of Law.
  Graduate School.
  Foreign Service School.

George Washington University (coeducational), nonsectarian:
- Columbian College, arts and science.
- School of Graduate Studies.
- College of Engineering.
- Teachers College.
- Law School.
- Medical School.
- College of Pharmacy.

Howard University (colored) (coeducational), under national control:
- School of Liberal Arts.
- School of Education.
- School of Commerce and Finance.
- School of Applied Science.
- School of Music.
- School of Religion (interdenominational).
- School of Medicine—
  - Medical College.
  - Dental College.
  - Pharmaceutic College.
- School of Law.

National University Law School.
Washington College of Law.
United States College of Veterinary Surgeons.

Washington is 225 miles from New York, 3,116 miles from San Francisco, and 1,118 miles from New Orleans.

SECTION III.

CHAPTER I.

COLLEGE ENTRANCE REQUIREMENTS.

Admission to American colleges or the collegiate divisions of universities is usually based upon the completion of a four-year secondary school course or its equivalent. Since there is considerable variation in the courses and standards of secondary schools, colleges have come by common consent to express their entrance requirements in terms of "units." The following definition of a "unit" is now generally accepted by both colleges and secondary schools throughout the country:

> **A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. A four-year secondary school curriculum should be regarded as representing not more than 16 units of work.**
>
> This statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high-school course as a basis, and assumes that the length of the school year is from 36 to 40 weeks, that a period is from 40 to 60 minutes in length, and that the study is pursued for four or five periods a week; but under ordinary circumstances, a satisfactory year's work in any subject can not be accomplished in less than one hundred and twenty 60-minute hours or their equivalent. Schools organized on any other than a four-year basis can, nevertheless, estimate their work in terms of this unit.

From the foregoing definition it appears that the four-year high-school course normally consists of 16 units of work. The entrance requirements of most standard colleges call for the completion of from 14 to 16 units. Colleges which require less than 14 units for admission are not regarded as standard.

Two methods of admission are common. Throughout the West and Middle West, and to a certain extent in the East also, colleges admit by certificate. Under this plan a candidate for entrance must present a statement from the principal or head master of the school which he has attended, showing the amount and character of the work he has done. If the certificate indicates that the studies required for entrance by the college have been satisfactorily pursued, and if the standing of the school issuing the certificate is known and approved by the college authorities, the candidate is admitted without further formalities.

The other method of admission, in vogue in a number of the older institutions in the East, is by examination. In order to systematize both the entrance examinations and the courses offered by the secondary schools in preparation for them, some 30 institutions which admit by this method, together with the principal associations of colleges and secondary schools, have formed an organization to conduct examinations, known as the College Entrance Examination Board. A student is admitted by any college which is a member of the board if he passes the examination set by the board in the subjects required by the college for entrance. The standards maintained by the board are so high that a certificate showing that a candidate has passed its examinations is generally accepted for entrance by other institutions also. Nevertheless, a few institutions which admit by examination prefer to conduct their own examinations.

The statements of the entrance requirements of the 74 institutions described in Section VI indicate that there is a wide variation not only in the subjects required by different institutions, but also in the number of units prescribed and in the way in which these units are distributed. Whether a student enters on a secondary school certificate or on the certificate of the College Entrance Examination Board or takes the special examinations of the institution he means to attend, he must meet the specific requirements of that institution in the matter of subjects and units prescribed.

The examinations of the College Entrance Examination Board cover almost the whole range of subjects required or accepted for college entrance by the leading institutions of the country. Its definitions of the content of these subjects may therefore serve to show the scope of secondary education in the various branches. The essential parts of its latest circular are quoted in the following pages. By consulting it the foreign student who plans to enter an American college should be able to estimate whether his preliminary studies have fitted him for admission to the college of his choice.[a] Most institutions are willing to make certain concessions from the strict letter of the requirements to students from foreign countries who can demonstrate an equivalent preparation in subjects other than those prescribed.

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[a] The board holds examinations in almost every State and in several foreign countries, including Canada, England, and France; also in the Canal Zone, Hawaii, and Porto Rico. A document showing places of examination will be sent on receipt of 15 cents by the secretary, 431 West 117th Street, New York, N. Y.

COLLEGE ENTRANCE SUBJECTS AS DEFINED BY THE COLLEGE ENTRANCE EXAMINATION BOARD.

English	*1.*	Grammar and composition.
	2.	Literature.[58]
History	*A.*	Ancient history.
	B.	Medieval and modern history.
	C.	Modern history.
	D.	English history.
	E.	American history.
	F.	Civil government.
	G.	American history and civil government.
Latin	*1.*	Grammar.
	2.	Elementary prose composition.
	3.	Second-year Latin.
	4.	Cicero and sight translation of prose.
	124.	Latin *1*, *2*, and *4* combined.
	5.	Vergil and sight translation of poetry.
	6.	Advanced prose composition.
	P.	Sight translation of prose.
	Q.	Sight translation of poetry.
Greek	*A1.*	Grammar.
	A2.	Elementary prose composition.
	B.	Xenophon (*Anabasis*, I–IV).
	C.	Homer (*Iliad*, I–III).
	F.	Prose composition.
	G.	Sight translation of Attic prose.
	BG.	Xenophon (*Anabasis*, I–IV) and sight translation of Attic prose.
	CH.	Homer (*Iliad*, I–III) and sight translation of Homer.
French	*A.*	Elementary (first and second years).
	B.	Intermediate (third year).
	BC.	Intermediate and advanced (third and fourth years).
German	*A.*	Elementary (first and second years).
	B.	Intermediate (third year).
	BC.	Intermediate and advanced (third and fourth years).
Spanish		
Mathematics	*A.*	Elementary algebra complete.
	A1.	Algebra to quadratics.
	A2.	Quadratics and beyond.
	B.	Advanced algebra.
	C.	Plane geometry.
	D.	Solid geometry.
	CD.	Plane and solid geometry.
	E.	Plane and spherical trigonometry.
	F.	Plane trigonometry.

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[58] The candidate must submit a teacher's certificate covering his reading in English literature. A suitable blank form for the certificate may be obtained from the secretary of the College Entrance Examination Board; but the certificate must be sent by mail to the *Chairman of the Committee on Admission* of the university, college, or scientific school that the candidate wishes to enter.

Biology[59]
Botany[59]
Chemistry[59]
Drawing—Freehand drawing.
Mechanical drawing.[60]
Geography[59]
Music—Harmony.
Physics[59]
Zoölogy[59]

The following scale of values of admission requirements in terms of units has received the indorsement of the College Entrance Examination Board:

	Units.		Units.
English *1*	1½	German *A*	2
2	1½	*B*	1
History *A*	1	*C*	1
B	1	Spanish	2
C	1	Mathematics *A*	2
D	1	*A1*	1
E	1	*A2*	1
Civil Government	½	*B*	½
Latin *1*[61]	1	*C*	1
2[61]	1	*D*	½
3[61]	2	*E*	½
4[61]	1	*F*	½
5[61]	1	Physics	1
6[61]	½	Chemistry	1
Greek *A1*	½	Biology	1
A2	½	Botany	1
B	1	Geography	1
C	1	Zoology	1
CH	1	Drawing—	
F	½	Freehand	1
French *A*	2	Mechanical	1
B	1	Music	1
C	1		

Literature.

The second object is sought by means of the reading and study of a number of books from which may be framed a progressive course in literature. The student should be trained in reading aloud and should be encouraged to commit to memory notable passages both in verse and in prose. As an aid to literary appreciation, he is further advised to acquaint himself with the most important facts in the lives of the authors whose works he reads and with their place in literary history. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads.

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[59] In each of these subjects the candidate must submit a teacher's certificate covering his laboratory work. A suitable blank form for the certificate may be obtained from the secretary of the College Entrance Examination Board; but the certificate must be mailed to the *Chairman of the Committee on Admission* of the university, college, or scientific school that the condidate wishes to enter.

[60] In mechanical drawing (but not in freehand drawing) the candidate must submit a number of certified plates. These plates should be sent by mail or express to the *Secretary of the College Entrance Examination Board* at the earliest possible date in advance of the examination in mechanical drawing. If the candidate's plates are unsatisfactory, his examination will be invalidated. A blank form indicating the character of the certificate required may be obtained from the secretary of the College Entrance Examination Board.

[61] Latin 1, 2, 4, and 5 are counted as one unit each, 3 as two units, and 6 as one-half unit; but 3 has no assigned value unless offered alone; 1, 2, and 6 have no assigned values unless offered with 4 or 5, and in no case is the total requirement to be counted as more than four units.

A few of these books should be read with special care, greater stress being laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions.

EXAMINATION, 1920–1922.

Candidates will have the option of taking either of two examinations: (1) Comprehensive; (2) restricted. The comprehensive examination is described on page 103. The following statements apply to the restricted examination.

However accurate in subject matter, no paper will be considered satisfactory if seriously defective in punctuation, spelling, or other essentials of good usage.

Grammar and Composition.

In grammar and composition, the candidate may be asked specific questions upon the practical essentials of these studies, such as the relation of the various parts of a sentence to one another, and those good usages of modern English which one should know in distinction from current errors. The main test in composition will consist of one or more essays developing a theme through several paragraphs; the subjects will be drawn from the books read, from the candidate's other studies, and from his personal knowledge and experience quite apart from reading. For this purpose the examiner will provide several subjects, perhaps 8 or 10, from which the candidate may make his own selections. He will not be expected to write more than 400 words an hour.

DEFINITION OF REQUIREMENTS.

ENGLISH.

The requirement in English is that recommended by the National Conference on Uniform Entrance Requirements in English.

REQUIREMENT FOR 1920–1922.

The study of English in school has two main objects, which should be considered of equal importance: (1) Command of correct and clear English, spoken and written; (2) ability to read with accuracy, intelligence, and appreciation, and the development of the habit of reading good literature with enjoyment.

Grammar and Composition.

The first object requires instruction in grammar and composition. English grammar should ordinarily be reviewed in the secondary school; and correct spelling and grammatical accuracy should be rigorously exacted in connection with all written work during the four years. The principles of English composition governing punctuation, the use of words, sentences, and paragraphs should be thoroughly mastered; and practice in composition, oral as well as written, should extend throughout the secondary school period. Written exercises may well comprise letter writing, narration, description, and easy exposition and argument. It is advisable that subjects for this work be taken from the student's personal experience, general knowledge, and studies other than English, as well as from his reading in literature. Finally, special instruction in language and composition should be accompanied by concerted effort of teachers in all branches to cultivate in the student the habit of using good English in his recitations and various exercises, whether oral or written.

Literature.

The examination will include:

A. Questions designed to test such knowledge and appreciation of literature as may be gained by an intelligent reading of the books given in List *A* below.

B. A test on the books in List *B* below. This will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

Division of Examination.

When parts *A* and *B* of the examination are taken at different times, each will include a test in grammar and composition.

LIST OF BOOKS, 1920–1922.

A. Books for Reading.

The books provided for reading are arranged in the following groups, from each of which at least two selections are to be made, except that for any book in Group I a book from any other may be substituted.

GROUP I—CLASSICS IN TRANSLATION.

The Old Testament, at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther.

The Odyssey, with the omission, if desired, of Books I–V, XV, and XVI.

The Æneid.

The Odyssey and the Æneid should be read in English translations of recognized literary excellence.

GROUP II—DRAMA.

Shakespeare: Merchant of Venice, As You Like It, Julius Cæsar.

GROUP III—PROSE FICTION.

Dickens: A Tale of Two Cities.
George Eliot: Silas Marner.
Scott: Quentin Durward.
Hawthorne: The House of the Seven Gables.

GROUP IV—ESSAYS, BIOGRAPHY, ETC.

Addison and Steele: The Sir Roger de Coverley Papers.
Irving: The Sketch Book—selections covering about 175 pages.
Macaulay: Lord Clive.
Parkman: The Oregon Trail.

GROUP V—POETRY.

Tennyson: The Coming of Arthur, Gareth and Lynette, Lancelot and Elaine, The Passing of Arthur.
Browning: Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City, The Italian in England, The Patriot, The Pied Piper, " De Gustibus "—, Instans Tyrannus.
Scott: The Lady of the Lake.
Coleridge: The Ancient Mariner, and **Arnold:** Sohrab and Rustum.

B. Books for Study.

The books provided for study are arranged in four groups, from each of which one selection is to be made.

GROUP I—DRAMA.

Shakespeare: Macbeth or Hamlet.

GROUP II—POETRY.

Milton: L'Allegro, Il Penseroso, Comus.
Book IV of Palgrave's Golden Treasury (First Series), with special attention to Wordsworth, Keats, and Shelley.

GROUP III—ORATORY.

Burke: Speech on Conciliation with America.
Washington's Farewell Address, Webster's First Bunker Hill Oration, and Lincoln's Gettysburg Address.

GROUP IV—ESSAYS.

Macaulay: Life of Johnson.
Carlyle: Essay on Burns, with a brief selection from Burns's Poems.

HISTORY AND CIVIL GOVERNMENT.

The requirements in history and civil government were defined by a special Commission of Eleven authorized by the College Entrance Examination Board November, 1916, and appointed by the Committee of Review, April, 1917. The requirements are based upon the recommendations of the Committee of Seven (1898), and of the Committee of Five (1910) of the American Historical Association.

Subjects *A*, *B*, *D*, and *G* correspond, in general, respectively, to the successive subjects outlined for a four-year course in History in *The Study of History in Schools: Report to the American Historical Association by the Committee of Seven* (New York, Macmillan, 1899), and with more detail in *A History Syllabus for Secondary Schools by a Special Committee of the New England History Teachers' Association* (Boston, Heath, 1904), though some changes of emphasis are suggested in the present statement. Subject *C* corresponds substantially with the Subject *C* suggested on page 64 of *The Study of History in Secondary Schools: Report to the American Historical Association by a Committee of Five* (New York, Macmillan, 1911). Subjects *E* and *F* represent the same content as Subject *G*, but are arranged for the benefit of those schools which give fuller instruction in either or both of these subjects than the year contemplated for Subject *G*.

In each of the subjects, except *F*, the following preparation is required:

1. Historical instruction in a high school or academy for one year to the extent specified in the definition of the Unit of Admission Requirements.
2. The study of an accurate historical textbook, in which not less than 500 pages of text are devoted to the particular subject.
3. Collateral reading of appropriate selections, in books of a less elementary nature, amounting to at least 500 pages.
4. The ability to compare historical characters, periods, and events, and in general the power to combine in orderly fashion the results of reading, and to exercise judgment as well as memory.
5. The ability to locate places historically important and to describe territorial changes and other historical movements on an outline map, acquired from the study of physical as well as political geography with the aid of map work.

A. Ancient History.

One unit.

The course should devote one-half of the year to the study of the history of the ancient Orient and of Greece as far as the death of Alexander and the break up of his empire, with the study of Western Hellas to the death of Timoleon. The second half year should be devoted to the study of the history of Rome as far as the death of Charlemagne. During this half year time should be found for the study of the Hellenistic Period of Greek history and the merging of the story of Greece with the story of Rome.

Since not more than one-tenth of the whole time available can be allotted to the study of the history of the Orient, only so much of its narrative history should be studied as will hold the story together and fix its geography and its time relations, including some fixed dates of early chronology. Emphasis should be laid not upon the details of military and political history but upon the civilization developed by the different peoples of the Orient, with particular reference to the contributions which they made to later ages.

When we pass to the study of Greek history little time should be spent on the period prior to the Persian Wars, except to deal concretely with Homeric society and to emphasize the expansion of Hellas. From the Persian Wars to the death of Alexander the study should be exact and thorough, with special reference to the political, intellectual, and artistic development of Hellas during the Age of Pericles. Instead of trying to trace the constitutional development of Athens and of Sparta from the beginning, the working of government in these states at this, the time of their maturity, should be mastered.

In the period following the death of Alexander no attempt should be made to follow the intricate political history of the time, but opportunity should be taken either at this point or, preferably, in the second half-year, just prior to studying the Roman conquest of the East, to dwell upon federal government in Greece and bureaucratic government in Egypt; upon science, philosophy, literature, art, and especially religion—the decaying religion of Greece and the expanding cults in the East—in a word, upon the formation of the mixed Græco-Oriental culture of which Rome became the heir.

At the beginning of the second half-year the history of Rome to about the year 300 B. C. should be covered very rapidly; the Roman religion being made the most important subject of study. The attempt should be made rather to understand the organization and working of Senatorial government in the third and second centuries B. C. than to trace the changes made in Roman institutions in the fifth and fourth centuries. From 300 B. C. to the death of Marcus Aurelius the study must be relatively detailed and thorough. After this period the course should move rapidly, lingering only on the reigns of Diocletian, Constantine, and Justinian. The period of, and after, the Barbarian Invasions must be viewed from the Roman side. Hence little attention should be given to Germanic or Mohammedan migrations and institutions and to the beginnings of the modern nations, but emphasis should be placed upon those institutions which helped to preserve and to pass on to later ages the contributions of Roman civilization; as, for example, the development of Roman law and of the Christian Church. Throughout, wherever possible, the treatment should be biographical.

B. Medieval and Modern History.

One unit.

The broad plan of this course should be to devote one-quarter of the year's work to the period prior to about 1300 A. D., closing with the death of Pope Boniface VIII; the second quarter should carry forward to about 1660, closing with the readjustments in the treaties of Westphalia and of the Pyrenees; the third quarter should close with the Congress of Vienna in 1815; and the work of the fourth quarter should be adjusted so as to give the last half of the time to events since 1878, with the purpose of explaining clearly the causes and the issues of the war of 1914.

The contribution of the Roman Empire, the Germans, the Christian Church, and Mohammedanism to medieval civilization, form the introduction to the study of feudalism, the Crusades, the formation of European states, and the varied aspects of medieval society. The several phases of the Renaissance and of the Reformation should be supplemented by study of the discoveries outside of Europe and of colonial rivalries. The absolute monarchy of Louis XIV, the enlightened despotism of Frederick the Great, and the republican government of Revolutionary France should be explained as types in the development of government on the continent. While the Napoleonic period should not be neglected, special emphasis should be laid upon the Industrial Revolution—its political and social aspects—upon the growth of nationalism and democracy, and upon the economic expansion of European states outside of Europe.

C. Modern History.

One unit.

After a brief survey of the international and colonial developments since the age of discovery, the course should begin with a cross-section of the governmental, social, and cultural conditions in Europe about 1660 A. D. The absolute monarchy of Louis XIV, the parliamentary government of England, the enlightened despotism of Frederick the Great, and the republican government of Revolutionary France and the imperialism of Napoleon should be studied as types of government in the transition from medieval feudalism to present-day democracy. Attention should be given to the growth of national states and to the leading international and colonial problems since 1660 which culminate in the British Empire with its self-governing dominions, the partition of Africa, the awakening of the Far East, and the great international rivalries of the present generation. Emphasis should be laid upon the Industrial Revolution—its political and social aspects—and some attention should be given to the leading features of the internal history of England, France, and Germany. The study of the last half century should include some account of the great material changes, important inventions, and intellectual, social, and humanitarian movements.

D. English History.

One unit.

The division of the work between the two half years should be made at about 1660.

During the first half year, the periods of the early Plantagenets (Henry II and Edward I), of the Tudors, and of the early Stuarts should receive emphasis. Though the economic conditions and the relations with Scotland and France and later with Spain are interesting as well as important, some attention should be given to such more difficult topics as Anglo-Norman feudalism; the origins of the Constitution, especially the Great Charter and the rise of Parliament; and the development from feudal monarchy toward parliamentary government. Some attempt also should be made to explain the development and character of the Christian church in England, its relations with papacy, the later severance of these relations, the establishment of the national church, and the Puritan movement.

In the second half year, starting with the Restoration, attention should first be given to the continued struggle between Crown and Parliament, culminating in the establishment of responsible government. In studying the great wars with France, attention should be directed to the commercial and colonial expansion in America and in the East. With regard to imperial policy, the causes and effects of the Scottish and Irish unions and the revolt of the American colonies should be explained. The study of the revolution in agriculture, industry, and transportation should include some consideration of the consequent political and social reforms. Since the Reform Act of 1867, emphasis should be laid upon the more important reforms affecting economic, social, and political life, and upon the problem of Ireland. Some idea should be given of the growth and nature of British power in India, and the problem of imperial organization.

In general, it is desirable to emphasize the important epochs and the greater movements rather than to give each reign equal stress; to trace developments in so far as possible; to secure a clear comprehension of the more influential personalities; and to show the relations of English history to the history of other countries, especially the United States.

E. American History.

One unit.

The course in American history should be so arranged that the work of the first half year will include the administration of John Quincy Adams, while that of the second half year will include events of recent occurrence. In the work of the first half year considerably more time should be spent on the period from 1763 to 1829 than on the period from early times to 1763; and in the work of the second half year more time should be given to the period since the Civil War than to that before.

For the guidance of both teachers and students the following suggestions are made:

1. That such topics as the routes of the principal discoverers and explorers, the resulting claims and settlements, campaigns of the principal wars, and territorial growth of the United States be studied primarily as map work.

2. That the European background should be given particular attention during the colonial period and during the national period to 1823.

3. That the various attempts at colonial union, the experiments in federal government, and the growth of federal power be especially emphasized.

4. That too much time should not be given to the topics of slavery, secession, and the reconstruction period. Instead, special attention should be paid to territorial expansion, and social and industrial growth.

5. That special importance should be accorded the policy of the United States in foreign affairs, tariff, banking, civil service, currency, corporation control, conservation of national resources, capital and labor, and other present-day problems.

6. That familiarity with the lives of great Americans should be especially encouraged.

F. Civil Government.

One-half unit.

Civil government in the United States (National, State, and local), its constitution, organization, and actual working.

The candidate will be expected to show such knowledge of the field as may be acquired from the study of a good textbook of not less than 300 pages, supplemented by collateral reading and discussion.

For the guidance of both teacher and student the following list of topics is suggested:

1. The purposes of government, including prevention of crime, care of dependents, preservation of public health, education, taxation, conservation of natural resources, immigration, and control of commerce.
2. The division of power and of activities among Federal, State, and local governments.
3. The Federal Government: its organization and working.
4. State government: its organization, scope, and problems.
5. Local government, with special attention to the forms and problems of municipal government.
6. Parties: their function and organization; the machinery of nomination and election.
7. Attempts at reform: initiative and referendum, recall, short ballot, etc.

NOTE.—The above list of topics is not intended to be exhaustive, but rather to suggest such representative topics as should be included in the school course.

G. American History and Civil Government.

One unit.

Candidates who wish to offer American history and civil government should devote approximately two-thirds of the allotted time to the study of American history, and one-third to the study of civil government. How this division of time should be arranged must be left to the experience of the individual teachers since the practice has been found to vary so widely that no general direction can be given.

In the time devoted to the study of American history the course should cover lightly the period of discovery and settlement and the colonial period to 1763.

The period from 1763 to 1837 should be covered with care. In the same way less emphasis may be placed upon the period from the end of the administration of Andrew Jackson to 1865 in order that time may be found to stress the period since the Civil War.

In the time devoted to the study of civil government the student should make a careful study of the Constitution of the United States, of the Federal Government, its powers, organization, and workings; should understand the relations between the State and the Federal Government, and the general nature and extent of the powers reserved to the States.

The examiners in preparing the question papers will be influenced by the consideration that the work of this course must be done more thinly than in course E and with much less time for collateral reading.

1. That such topics as the routes of the principal discoverers and explorers, the resulting claims and settlements, campaigns of the principal wars, and the territorial growth of the United States be studied as map work.

2. That the various attempts at colonial union, the experiments in Federal Government, and the growth of Federal power be especially emphasized.

3. That too much time should not be given to the topics of slavery, secession, and the reconstruction period. Instead special attention should be paid to territorial expansion, and social and industrial growth.

4. That special importance should be accorded the policy of the United States in foreign affairs, tariff, banking, civil service, currency, corporation control, conservation of national resources, capital and labor, and other present-day problems.

5. That familiarity with the lives of great Americans should be especially encouraged.

The following topics should be mentioned:

6. The purposes of government, including prevention of crime, care of dependents, preservation of public health, education, taxation, immigration, and control of commerce.

7. The division of power and of activities among Federal, State, and local governments.

8. The Federal Government: its organization and working.

9. State government: its organization, scope, and problems.

10. Parties: their function and organization; the machinery of nomination and election.

11. Attempts at reform: initiative and referendum, recall, short ballot, etc.

NOTE.—The above list is not intended to be exhaustive but rather to suggest such representative topics as should be included in the school course.

LATIN—NEW REQUIREMENTS.

The following requirements in Latin are in accordance with the recommendations made to the American Philological Association by the Commission on College Entrance Requirements in Latin, October, 1909.[a]

I. Amount and Range of the Reading Required.

(1) The Latin reading, without regard to the prescription of particular authors and works, shall be not less *in amount* than Cæsar, Gallic War, I–IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Vergil, Æneid, I–VI.

(2) The amount of reading specified above shall be selected by the schools from the following authors and works: Cæsar (Gallic War and Civil War) and

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[a] This commission and its work are described in the Tenth Annual Report of the secretary of the College Entrance Examination Board, pages 4–7.

Nepos (Lives); Cicero (orations, letters, and De Senectute) and Sallust (Catiline and Jugurthine War); Vergil (Bucolics, Georgics, and Æneid) and Ovid (Metamorphoses, Fasti, and Tristia).

II. Scope of the Examinations.

(1) *Translation at Sight.*—Candidates will be examined in translation at sight of both prose and verse. The vocabulary, constructions, and range of ideas of the passages set will be suited to the preparation secured by the reading indicated above.

(2) *Prescribed Reading.*—Candidates will be examined also upon the following prescribed reading:

In 1919. Cicero, orations for the Manilian Law, and for Archias; Vergil, Æneid, I, II, and either IV or VI, at the option of the candidate.

In 1920, 1921, and 1922. Cicero, the third oration against Catiline and the orations for Archias and Marcellus; Vergil, Æneid, II, III, and VI.

In 1923, 1924, and 1925. Cicero, the fourth oration against Catiline and the oration for the Manilian Law; Vergil, Æneid, I and IV; Ovid, Metamorphoses, Book III, 1–137 (Cadmus); IV, 55–166 (Pyramus and Thisbe), and 663–764 (Perseus and Andromeda); VI, 165–312 (Niobe); VIII, 183–235 (Dædalus and Icarus); X, 1–77 (Orpheus and Eurydice); XI, 85–145 (Midas).

Accompanying the different passages will be questions on subject matter, literary and historical allusions, and prosody. Every paper in which passages from the prescribed reading are set for translation will contain also one or more passages for translation at sight; and candidates must deal satisfactorily with both these parts of the paper, or they will not be given credit for either part.

(3) *Grammar and Composition.*—The examinations in grammar and composition will demand thorough knowledge of all regular inflections, all common irregular forms, and the ordinary syntax and vocabulary of the prose authors read in school, with ability to use this knowledge in writing simple Latin prose.

Suggestions Concerning Preparation.

Exercises in translation at sight should begin in school with the first lessons in which Latin sentences of any length occur, and should continue throughout the course with sufficient frequency to insure correct methods of work on the part of the student. From the outset particular attention should be given to developing the ability to take in the meaning of each word—and so, gradually, of the whole sentence—just as it stands; the sentence should be read and understood in the order of the original, with full appreciation of the force of each word as it comes, so far as this can be known or inferred from that which has preceded, and from the form and the position of the word itself. The habit of reading in this way should be encouraged and cultivated as the best preparation for all the translating that the student has to do. No translation, however, should be a mechanical metaphrase. Nor should it be a mere loose paraphrase. The full meaning of the passage to be translated, gathered in the way described above, should finally be expressed in clear and natural English.

A written examination can not test the ear or tongue, but proper instruction in any language will necessarily include the training of both. The school work in Latin, therefore, should include much reading aloud, writing from dictation, and translation from the teacher's reading. Learning suitable passages by heart is also very useful, and should be more practised.

The work in composition should give the student a better understanding of the Latin he is reading at the time, if it is prose, and greater facility in reading. It is desirable, however, that there should be systematic and regular work in composition during the time in which poetry is read as well; for this work the prose authors already studied should be used as models.

Subjects for Examination.

Latin 1, 2, 4, and 5 are counted as one unit each, 3 as two units, and 6 as one-half unit; but 3 has no assigned value unless offered alone; 1, 2, and 6 have no assigned values unless offered with 4 or 5, and in no case is the total requirement to be counted as more than four units.

1. **Grammar.** The examination will presuppose the reading of the required amount of prose (see I, 1 and 2), including the prose works prescribed (see II, 2).

2. **Elementary Prose Composition.** The examination will presuppose the reading of the required amount of prose (see I, 1 and 2), including the prose works prescribed (see II, 2).

3. **Second-Year Latin.** This examination is offered primarily for candidates intending to enter colleges which require only two years of Latin or accept so much as a complete preparatory course. It will presuppose reading not less in amount than Cæsar, *Gallic War,* I–IV, selected by the schools from Cæsar (*Gallic War* and *Civil War*) and Nepos (*Lives*); but the passages set will be chosen with a view to sight translation. The paper will include easy grammatical questions and some simple composition.

4. **Cicero**[63] **(orations for the Manilian Law and for Archias) and Sight Translation of Prose.**—The examination will presuppose the reading of the required amount of prose (see I, 1 and 2).

124. **Latin 1, 2, and 4 combined.**

5. **Vergil**[63] (*Æneid,* I, II, and either IV or VI, at the option of the candidate) and **Sight Translation of Poetry.**—The examination will presuppose the reading of the required amount of poetry (see I, 1 and 2).

6. **Advanced Prose Composition.**

LATIN—OLD REQUIREMENTS.

The recommendations of the Committee of Twelve of the American Philological Association were included in the Report of the Committee of the National Education Association on College Entrance Requirements. Some of the examinations in Latin formerly held by the board are now superseded by examinations described above.

P. **Advanced Sight Translation of Prose** of no greater difficulty than ordinary passages from Cicero's orations.

Q. **Sight Translation of Poetry** of no greater difficulty than Vergil's *Æneid.*

GREEK.

The following requirements in Greek conform as closely as possible to the recommendations of the Committee of Twelve of the American Philological Association.

A1 **Grammar.**—The inflections; the simpler rules for composition and derivation of words; syntax of cases and the verbs; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive.[64] *One-half unit.*

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[63] In 1920 there will be a change in the Latin prescribed for intensive study, see pages 70 and 71.

[64] Some colleges consider Greek *A1* and Greek *A2* as together constituting a single indivisible subject.

A2. **Elementary Prose Composition**, consisting principally of detached sentences to test the candidate's knowledge of grammatical construction.[64] *One-half unit.*

The examination in grammar and prose composition will be based on the first two books of Xenophon's *Anabasis*.

B. **Xenophon.**—The first four books of the *Anabasis*. *One unit.*

C. **Homer**—*Iliad*, I–III: The first three books of the *Iliad* (omitting II, 494–end), and the Homeric constructions, form, and prosody. *One unit.*

F. **Prose Composition**, consisting of continuous prose based on Xenophon and other Attic prose of similar difficulty. *One-half unit.*

G. **Sight Translation of Attic Prose** of no greater difficulty than Xenophon's *Anabasis*.

BG. **Xenophon and Sight Translation of Prose.**

CH. **Homer**—*Iliad*, I–III, **and Sight Translation of Homer.** *One unit.*

FRENCH.

The requirements in French follow the recommendations of the Committee of Twelve of the Modern Language Association of America.[65]

A. Elementary French.

Two units.

THE AIM OF THE INSTRUCTION.

At the end of the elementary course the pupil should be able to pronounce French accurately, to read at sight easy French prose, to put into French simple English sentences taken from the language of every-day life or based upon a portion of the French text read, and to answer questions on the rudiments of the grammar as defined below.

THE WORK TO BE DONE.

During the first year the work should comprise:

1. Careful drill in pronunciation.
2. The rudiments of grammar, including the inflection of the regular and the more common irregular verbs, the plural nouns, the inflection of adjectives, participles, and pronouns; the use of personal pronouns, common adverbs, prepositions, and conjunctions; the order of words in the sentence, and the elementary rules of syntax.
3. Abundant easy exercises, designed not only to fix in the memory the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression.
4. The reading of from 100 to 175 duodecimo pages of graduated texts, with constant practice in translating into French easy variations of the sentences read (the teacher giving the English) and in reproducing from memory sentences previously read.
5. Writing French from dictation.

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[64] Some colleges consider Greek *A1* and Greek *A2* as together constituting a single indivisible subject.

[65] The Report of the Committee of Twelve, which was submitted in December, 1898, may be obtained in separate book form from D. C. Heath & Co. The lists of texts at present given in the requirements of the College Entrance Examination Board were recommended by a committee of the Modern Language Association in December, 1910.

Suitable texts for the first year are: A well graded reader for beginners; Bruno, *Le tour de la France;* Compayré, *Yvan Gall;* Laboulaye, *Contes bleus;* Malot, *Sans famille.*

During the second year the work should comprise:

1. The reading of from 250 to 400 pages of easy modern prose in the form of stories, plays, or historical or biographical sketches.
2. Constant practice, as in the previous year, in translating into French easy variations upon the texts read.
3. Frequent abstracts, sometimes oral and sometimes written, of portions of the text already read.
4. Writing French from dictation.
5. Continued drill upon the rudiments of grammar, with constant application in the construction of sentences.
6. Mastery of the forms and use of pronouns, pronominal adjectives, of all but the rare irregular verb forms, and of the simpler uses of the conditional and subjunctive.

Suitable texts for the second year are: Daudet, *Le Petit Chose;* Erckmann-Chatrian, stories; Halévy, *L'Abbé Constantin;* Labiche et Martin, *Le voyage de M. Perrichon;* Lavisse, *Histoire de France.*

B. Intermediate French.

One unit.

THE AIM OF THE INSTRUCTION.

At the end of the intermediate course the pupil should be able to read at sight ordinary French prose or simple poetry, to translate into French a connected passage of English based on the text read, and to answer questions involving a more thorough knowledge of syntax than is expected in the elementary course.

THE WORK TO BE DONE.

This should comprise the reading of from 400 to 600 pages of French of ordinary difficulty, a portion to be in the dramatic form; constant practice in giving French paraphrases, abstracts or reproductions from memory of selected portions of the matter read; the study of a grammar of moderate completeness; writing from dictation.

Suitable texts for the third year are: Bazin, *Les Oberlé;* Dumas, novels; *Mérimée, Colomba;* Sandeau, *Mlle. de la Seiglière;* Tocqueville, *Voyage en Amérique.*

C. Advanced French.[60]

One unit.

THE AIM OF THE INSTRUCTION.

At the end of the advanced course the pupil should be able to read at sight, with the help of a vocabulary of special or technical expressions, difficult French not earlier than that of the seventeenth century; to write in French a short essay on some simple subject connected with the works read; to put into French a passage of easy English prose; and to carry on a simple conversation in French.

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[60] The board does not hold a separate examination in advanced French. In place of it an examination is held covering the intermediate and advanced requirements in combination as a single subject.

THE WORK TO BE DONE.

This should comprise the reading of from 600 to 1,000 pages of standard French, classical and modern, only difficult passages being explained in the class; the writing of numerous short themes in French; the study of syntax.

Suitable texts for the fourth year are: Dumas fils, *La question d'argent;* Hugo, *Quatre-vingt-treize* or *Les misérables;* Loti, *Pêcheur d'Islande;* Taine, *L'Ancien régime;* Vigny, *Cinq-Mars;* an anthology of verse.

BC. Intermediate French and Advanced French.

Two units.

GERMAN.

The requirements in German follow the recommendations of the Committee of Twelve of the Modern Language Association of America.[67]

A. Elementary German.

Two units.

THE AIM OF THE INSTRUCTION.

At the end of the elementary course in German the pupil should be able to read at sight, and to translate, if called upon, by way of proving ability to read, a passage of very easy dialogue or narrative prose, help being given upon unusual words and construction, to put into German short English sentences taken from the language of every-day life or based upon the text given for translation, and to answer questions upon the rudiments of the grammar, as defined below.

THE WORK TO BE DONE.

During the first year the work should comprise:

1. Careful drill upon pronunciation.
2. The memorizing and frequent repetition of easy colloquial sentences.
3. Drill upon the rudiments of grammar, that is, upon the inflection of the articles, of such nouns as belong to the language of every-day life, of adjectives, pronouns, weak verbs, and the more usual strong verbs; also upon the use of the more common prepositions, the simpler uses of the modal auxiliaries, and the elementary rules of syntax and word-order.
4. Abundant easy exercises designed not only to fix in mind the forms and principles of grammar, but also to cultivate readiness in the reproduction of natural forms of expression.
5. The reading of from 75 to 100 pages of graduated texts from a reader, with constant practice in translating into German easy variations upon sentences selected from the reading lesson (the teacher giving the English), and in the reproduction from memory of sentences previously read.

Suitable texts for the first year[68] are: After one of the many Readers especially prepared for beginners—Meissner's *Aus meiner Welt;* Blüthgen's *Das Peterle von Nürnberg;* Storm's *Immensee,* or any of Baumbach's short stories.

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[67] The Report of the Committee of Twelve, which was submitted in December, 1898, may be obtained in separate book form from D. C. Heath & Co. The lists of texts at present given in the requirements of the College Entrance Examination Board were recommended by a committee of the Modern Language Association in December, 1910.

[68] During each year at least six German poems should be committed to memory.

During the second year the work should comprise:

1. The reading of from 150 to 200 pages of literature in the form of easy stories and plays.
2. Accompanying practice, as before, in the translation into German of easy variations upon the matter read and also in the off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages.
3. Continued drill upon the rudiments of the grammar, directed to the ends of enabling the pupil, first, to use his or her knowledge with facility in the formation of sentences, and, secondly, to state his or her knowledge correctly in the technical language of grammar.

Suitable texts for the second year [69] are: Gerstäcker's *Germelshausen;* Eichendorff's *Aus dem Leben einer Taugenichts;* Wildenbruch's *Das edle Blut;* Jensen's *Die braune Erica;* Seidel's *Leberecht Hühnchen;* Fulda's *Unter vier Augen;* Benedix's *Lustspiele* (any one). For students preparing for a scientific school a scientific reader is recommended.

B. Intermediate German.

One unit.

THE AIM OF THE INSTRUCTION.

At the end of the intermediate course the pupil should be able to read at sight German prose of ordinary difficulty, whether recent or classical; to put into German a connected passage of simple English, paraphrased from a given text in German; to answer any grammatical questions relating to usual forms and essential principles of the language, including syntax and word-formation, and to translate and explain (so far as explanation may be necessary) a passage of classical literature taken from some text previously studied.

THE WORK TO BE DONE.

The work should comprise, in addition to the elementary course, the reading of about 400 pages of moderately difficult prose and poetry, with constant practice in giving, sometimes orally and sometimes in writing, paraphrases, abstracts, or reproductions from memory of selected portions of the matter read; also grammatical drill upon the less usual strong verbs, the use of articles, cases, auxiliaries of all kinds, tenses and modes (with special reference to the infinitive and subjunctive), and likewise upon word-order and word-formation.

Suitable texts for the third year [69] are: Heyse's, Riehl's, Keller's, Storm's, Meyer's, Ebner-Eschenbach's, W. Raabe's *Novellen* or *Erzählungen;* Schiller's *Wilhelm Tell;* Freytag's *Die Journalisten;* Heine's *Harzreise.*

C. Advanced German.[70]

One unit.

THE AIM OF THE INSTRUCTION.

At the end of the advanced course the student should be able to read, after brief inspection, any German literature of the last one hundred and fifty years that is free from any unusual textual difficulties, to put into German a passage of simple English prose, to answer in German questions relating to the lives and works of great writers studied, and to write in German a short independent theme upon some assigned topic.

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[69] At least six German poems should be committed to memory.

[70] The board does not hold a separate examination in advanced German. In place of it an examination is held covering the intermediate and advanced requirements in combination as a single subject.

THE WORK TO BE DONE.

The work of the advanced course should comprise the reading of about five hundred pages of good literature in prose and poetry, reference readings upon the lives and works of the great writers studied, the writing in German of numerous short themes upon assigned subjects, independent translation of English into German.

Suitable texts for the fourth year[n] are: Goethe's, Schiller's, Lessing's works and lives.

***BC*. Intermediate German and Advanced German.**

Two units.

SPANISH.

Two units.

The requirement in Spanish, which follows the form and spirit of the recommendations made for French and German by the Committee of Twelve of the Modern Language Association, is based upon recommendations made by a committee of that association in December, 1910.

THE AIM OF THE INSTRUCTION.

At the end of the elementary course the pupil should be able to pronounce Spanish accurately, to read at sight easy Spanish prose, to put into Spanish simple English sentences taken from the language of every-day life or based upon a portion of the Spanish text read, and to answer questions on the rudiments of the grammar, as indicated below.

THE WORK TO BE DONE.

During the first year the work should comprise:

1. Careful drill in pronunciation.
2. The rudiments of grammar, including the conjugation of the regular and the more common irregular verbs, the inflection of nouns, adjectives, and pronouns, and the elementary rules of syntax.
3. Exercises containing illustrations of the principles of grammar.
4. The careful reading and accurate rendering into good English of about 100 pages of easy prose and verse, with translation into Spanish of easy variations of the sentences read.
5. Writing Spanish from dictation.

During the second year the work should comprise:

1. The reading of about 200 pages of prose and verse.
2. Practice in translating Spanish into English, and English variations of the text into Spanish.
3. Continued study of the elements of grammar and syntax.
4. Mastery of all but the rare irregular verb forms and of the simpler uses of the modes and tenses.

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[n] At least six German poems should be committed to memory.

5. Writing Spanish from dictation.
6. Memorizing of easy short poems.

The emphasis should be placed on careful thorough work, with much repetition rather than upon rapid reading. The reading should be selected from the following: A collection of easy short stories and lyrics, carefully graded; Juan Valera, *El pájaro verde;* Perez Escrich, *Fortuna;* Ramos Carrión and Vital Aza, *Zaragüeta;* Palacio Valdés, *José;* Pedro de Alarcón, *El Capitán Veneno;* the selected short stories of Pedro de Alarcón or Antonio de Trueba.

Every secondary school in which Spanish is taught should have in its library several Spanish-English and English-Spanish dictionaries, the all-Spanish dictionary of the Royal Spanish Academy; one or more manuals of the history of Spanish literature, such as that by Fitzmaurice-Kelly, and Ticknor's *History of Spanish Literature.*

MATHEMATICS.

The present definition of the requirements in mathematics is in accordance with recommendations made in September, 1903, by a committee of the American Mathematical Society.[72]

A. Elementary Algebra.

Two units.

The four fundamental operations for rational algebraic expressions.

Factoring, determination of highest common factor and lowest common multiple by factoring.

Fractions, including complex fractions, and ratio and proportion.

Linear equations, both numerical and literal, containing one or more unknown quantities.

Problems depending on linear equations.

Radicals, including the extraction of the square root of polynomials and of numbers.

Exponents, including the fractional and negative.

Quadratic equations, both numerical and literal.

Simple cases of equations with one or more unknown quantities, that can be solved by the methods of linear or quadratic equations.

Problems depending on quadratic equations.

The binomial theorem for positive integral exponents.

The formulas for the nth term and the sum of the terms of arithmetical and geometric progressions, with applications.

It is assumed that pupils will be required throughout the course to solve numerous problems which involve putting questions into equations. Some of these problems should be chosen from mensuration, from physics, and from commercial life. The use of graphical methods and illustrations, particularly in connection with the solution of equations, is also expected.

A1. Algebra to Quadratics.

One unit.

The first seven topics described under Elementary Algebra.

A2. Quadratics and Beyond.

One unit.

The last five topics described above under elementary algebra.

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[72] The Report of the Committee of the American Mathematical Society on Entrance Requirements in Mathematics was published in the *Bulletin of the American Mathematical Society* for November, 1903, vol. IX, no. 2.

B. Advanced Algebra.

One-half unit.

Permutations and combinations, limited to simple cases.

Complex numbers, with graphical representation of sums and differences.

Determinants, chiefly of the second, third, and fourth orders, including the use of minors and the solution of linear equations.

Numerical equations of higher degree, and so much of the theory of equations, with graphical methods, as is necessary for their treatment, including Descartes's rule of signs and Horner's method, but not Sturm's functions or multiple roots.

C. Plane Geometry.

One unit.

The usual theorems and constructions of good textbooks,[73] including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle.

The solution of numerous original exercises, including loci problems.

Applications to the mensuration of lines and plane surfaces.

D. Solid Geometry.

One-half unit.

The usual theorems and constructions of good textbooks,[73] including the relations of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle.

The solution of numerous original exercises, including loci problems.

Application to the mensuration of surfaces and solids.

CD. Plane and Solid Geometry.

One and one-half units.

E. Trigonometry.

One-half unit.

Definitions and relations of the six trigonometric functions as ratios; circular measurement of angles.

Proofs of principal formulas, in particular for the sine, cosine, and tangent of the sum and the difference of two angles, of the double angle and the half angle, the product expressions for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas.

Solution of trigonometric equations of a simple character.

Theory and use of logarithms (without the introduction of work involving infinite series).

The solution of right and oblique triangles and practical applications, including the solution of right spherical triangles.

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[73] The board's examination questions in plane and solid geometry will be limited to propositions contained in the syllabus prepared by the National Committee of Fifteen appointed by the American Federation of Teachers of the Mathematical and Natural Sciences and the National Education Association. The report of the committee was published in *The Mathematics Teacher* for December, 1912.

F. Plane Trigonometry.

One-half unit.

This subject is the same as the preceding except that no topics from spherical trigonometry are included.

PHYSICS.

One unit.

The present definition of the requirement in physics was framed by a commission, the appointment of which was authorized by the College Entrance Examination Board in May, 1907. The report of the Commission was accepted in April, 1909.[74]

General Statement.

1. The course of instruction in physics should include:

(*a*) The study of one standard textbook, for the purpose of obtaining a connected and comprehensive view of the subject. The student should be given opportunity and encouragement to consult other scientific literature.

(*b*) Instruction by lecture-table demonstrations, to be used mainly for illustration of the facts and phenomena of physics in their qualitative aspects and in their practical applications.

(*c*) Individual laboratory work consisting of experiments requiring at least the time of 30 double periods, two hours in the laboratory to be counted as equivalent to one hour of classroom work. The experiments performed by each student should number at least 30. Those named in the appended list are suggested as suitable. The work should be so distributed as to give a wide range of observation and practice.

The aim of laboratory work should be to supplement the pupil's fund of concrete knowledge and to cultivate his power of accurate observation and clearness of thought and expression. The exercises should be chosen with a view to furnishing forceful illustrations of fundamental principles and their practical applications. They should be such as yield results capable of ready interpretation, obviously in conformity with theory, and free from the disguise of unintelligible units.

Slovenly work should not be tolerated, but the effort for precision should not lead to the use of apparatus or processes so complicated as to obscure the principle involved.

2. Throughout the whole course special attention should be paid to the common illustrations of physical laws and to their industrial applications.

3. In the solution of numerical problems, the student should be encouraged to make use of the simple principles of algebra and geometry to reduce the difficulties of solution. Unnecessary mathematical difficulties should be avoided and care should be exercised to prevent the student from losing sight of the concrete facts in the manipulation of symbols.

Syllabus.

The following is a list of topics which are deemed fundamental and which should therefore be included in every well-planned course of elementary physics. Only a few of the most important applications of these topics have

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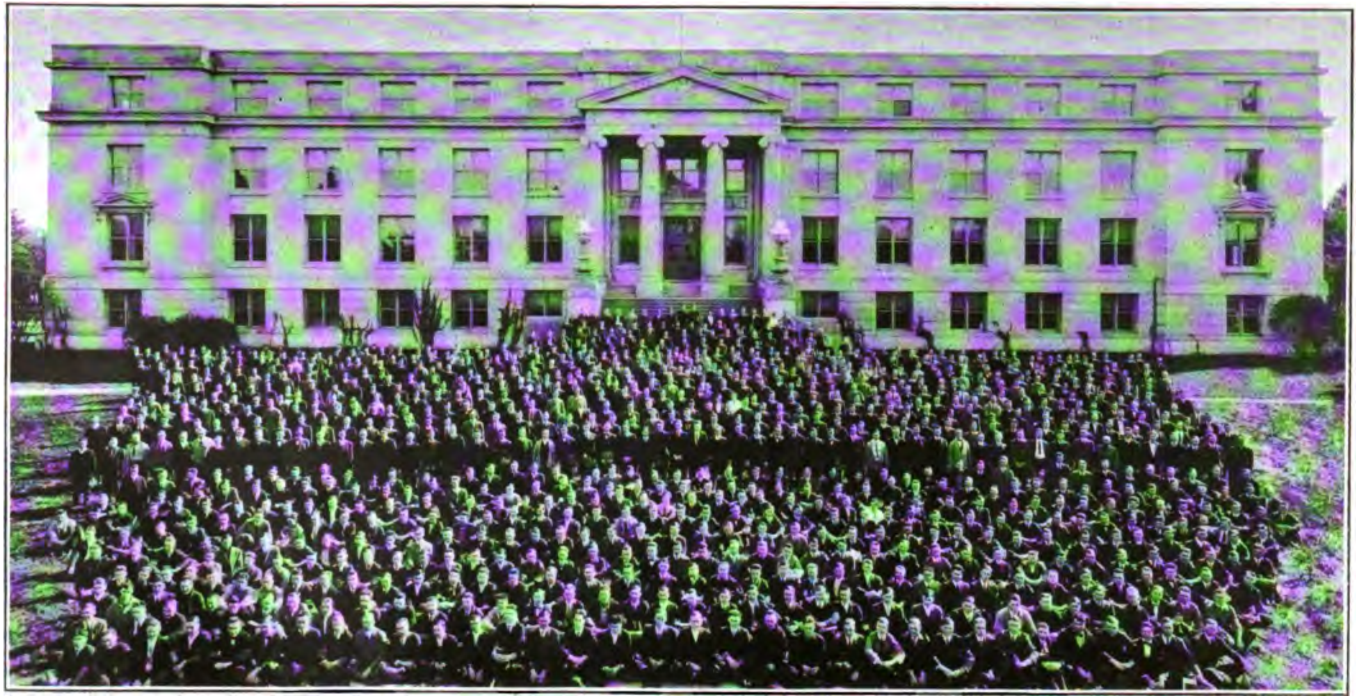
[74] The commission and its work are described in the Ninth Annual Report of the Secretary of the College Entrance Examination Board, pages 4–12.

THE YALE "BOWL," WHERE YALE UNIVERSITY ATHLETIC CONTESTS ARE HELD, NEW HAVEN, CONN.

A. ADMINISTRATION BUILDING, UNIVERSITY OF CALIFORNIA, BERKELEY, CALIF.

B. GREEK THEATER, UNIVERSITY OF CALIFORNIA, BERKELEY, CALIF.



AGRICULTURAL STUDENTS AND STAFF, IOWA STATE COLLEGE, AMES, IOWA.

been mentioned; teachers should add liberally to them. It is expected that the teacher will arrange these topics in such order as will suit his individual needs.

I. INTRODUCTION:
  - *a.* Metric System.
    Linear measure, units—meter, centimeter, millimeter.
    Square measure—square centimeter.
    Cubic measure—cubic centimeter, liter.
    Mass—kilogram, gram.
  - *b.* Volume, weight, density.
  - *c.* States of matter: solids, liquids, gases.

II. MECHANICS:

Fluids.

  - *a.* Pascal's Law of Fluid Pressure. The hydraulic press.
  - *b.* Pressure due to gravity.
    Pressure varying with depth and density of the liquid.
    Total pressure on the bottom of a vessel.
  - *c.* Principle of Archimedes.
  - *d.* Specific gravity of solids and liquids.
  - *e.* Gases—relation between pressure and volume.
  - *f.* Atmosphere pressure, buoyancy, the barometer, pumps for liquids and gases.

Solids.

  - *a.* Principle of moments.
    Parallelogram of forces (Resolution of forces, rectangular only).
  - *b.* Newton's Laws of Motion.
    Force, momentum, velocity, acceleration.
    Uniformly accelerated motion, when initial or final velocity is zero.
    Falling bodies.
  - *c.* Mechanical work.
    Energy—potential and kinetic.
    Conservation of energy.
  - *d.* Machines: Principle of work applied to machines, mechanical advantage, friction, efficiency. (Use terms, effort, and resistance.)
    Lever, wheel, and axle, pulleys, inclined plane.
  - *e.* Uniform circular motion; centrifugal and centripetal forces qualitatively illustrated.
  - *f.* Law of universal gravitation.
    Relation of weight to mass.
    Center of gravity.
    Stability.

III. HEAT:
  - *a.* Heat—a form of energy.
    Temperature, Centrigrade and Fahrenheit scales.
  - *b.* Conduction, convection, and radiation.

III. HEAT—Continued.
- *c.* Expansion of solids, coefficient of linear expansion.
  Expansion of liquids, anomalous expansion of water.
  Expansion of gases, Law of Charles, absolute zero.
- *d.* Change of state.
  Fusion, the melting point.
  Vaporization, boiling, evaporation.
- *e.* Measurement of heat, latent and specific heat.
- *f.* Mechanical equivalent of heat.

IV. SOUND:
- *a.* Nature and origin of sound.
- *b.* Pitch, loudness, quality.
- *c.* Velocity.
- *d.* Reflection of sound, echoes.
- *e.* Resonance.

V. LIGHT:
- *a.* Definitions:
  Light, luminous bodies, illuminated bodies, transparent, translucent, and opaque bodies.
- *b.* Rectilinear propagation of light in a homogeneous medium, shadows, pinhole camera.
- *c.* Photometry.
  Intensity of light (source) and intensity of illumination distinguished.
  Law of inverse squares.
- *d.* Reflection.
  Law of reflection. Regular and diffused reflection.
  Plane and spherical mirrors, position and character of images.
- *e.* Refraction.
  Laws of refraction (qualitative).
  Refraction by plates, prisms, and lenses.
  Lenses: Converging and diverging, conjugate foci, principal focus, principal axis.
  Position and character of real and virtual images formed by converging lenses.
  Dispersion, color, and the spectrum.
  Applications: The camera, the human eye, the compound microscope, the telescope.

VI. MAGNETISM:
- *a.* Magnets, permanent and temporary.
- *b.* Polarity, magnetic attraction, and repulsion.
- *c.* Magnetic induction, magnetic field and lines of force, permeability.
- *d.* The earth as a magnet, compass, declination, dip.

VII. STATIC ELECTRICITY:
- *a.* Electrification by friction; two kinds.
- *b.* Electrical attraction and repulsion; electroscopes.
- *c.* Conductors and insulators; electrification by induction.
- *d.* Condensers.

VIII. CURRENT ELECTRICITY:
- *a.* Simple voltaic cell.
  Electro-chemical action.
  Local action and polarization; prevention of polarization.

VIII. CURRENT ELECTRICITY—Continued.

- *b*. Types of cells (Daniel, Leclanché).
- *c*. Electrolysis.
  The ampere.
  Electrolysis of water, electro-deposition of metals.
  Storage cell.
- *d*. Electro-magnetism.
  Magnetic field around a current.
  Relation between direction of current and lines of magnetic force.
  Electro-magnets, ampere turns (qualitative).
  The electric bell and the telegraph.
- *e*. Resistance.
  The ohm.
  Ohm's law.
  The volt.
  Power:—the watt and the watt hour.
- *f*. Heating effects.
  Fuse wire and electric heater.
  Arc and incandescent lamps.
- *g*. Measuring instruments: galvanometer, ammeter, voltmeter, resistance box.
- *h*. Series and parallel connection of cells, lamps, etc.
- *i*. Fall of potential in a circuit.
- *j*. Electro-magnetic induction.
  Direction and magnitude of the induced electro-motive force.
  Simple two-pole dynamo and motor.
  Simple alternating and direct current generator.
  Transformer, induction coil, telephone.

List of Experiments.

MECHANICS:

1. Weight of unit volume of a substance, prism or cylinder.
2. Principle of Archimedes.
3. Specific gravity of a solid body that will sink in water.
4. Specific gravity of a liquid, two methods (bottle and displacement methods); or,
5. Specific gravity of a liquid by balancing columns.
6. Boyle's law.
7. Density of air.
8. Hooke's law.
9. Strength of material.
10. The straight lever, principle of moments.
11. Center of gravity and weight of a lever.
12. Parallelogram of forces.
13. Four forces at right angles in one plane.
14. Coefficient of friction between solid bodies—on a level and by sliding on an incline.
15. Efficiency test of some elementary machine, either pulley, inclined plane, or wheel and axle.
16. Laws of the pendulum.
17. Laws of accelerated motion.

HEAT:

18. The mercury thermometer; relation between pressure of steam and its temperature.
19. Linear expansion of a solid.
20. Increase of pressure of a gas heated at constant volume; or,
21. Increase of volume of a gas heated at constant pressure.
22. Heat of fusion of ice.
23. Cooling curve through change of state (during solidification).
24. Heat of vaporization of water.
25. Determination of the dew point.
26. Specific heat of a solid.

SOUND:

27. Velocity of sound.
28. Wave length of sound.
29. Number of vibrations of a tuning fork.

LIGHT:

30. Use of photometer.
31. Images in a plane mirror.
32. Images formed by a convex mirror.
33. Images formed by a concave mirror.
34. Index of refraction of glass; or,
35. Index of refraction of water.
36. Focal length and conjugate foci of a converging lens.
37. Shape and size of a real image formed by a lens.
38. Magnifying power of a lens.
39. Construction of model of telescope or compound microscope.

MAGNETISM AND ELECTRICITY:

40. Study of magnetic field.
41. Magnetic induction.
42. Study of a single fluid voltaic cell.
43. Study of a two-fluid voltaic cell.
44. Magnetic effect on an electric current.
45. Electrolysis.
46. Laws of electrical resistance of wires; various lengths, cross-section, and in parallel.
47. Resistance measured by a volt-ammeter method.
48. Resistance measured by Wheatstone's bridge.
49. Battery resistance—combination of cells.
50. Study of induced currents.
51. Power or efficiency test of a small electric motor.

Laboratory Notebook.

The College Entrance Examination Board does not require the submission of the candidate's laboratory notebook as part of the examination in physics. The notebook, if required by the college or scientific school that the candidate wishes to enter, should be forwarded directly to the proper authorities of that institution.

Teacher's Laboratory Certificate.

The laboratory certificate, if required by the college or scientific school that the candidate wishes to enter, should be forwarded directly to the proper authorities of that institution.

(School)

(Post Office Address of School)

(Date)

(College or scientific school that candidate purposes entering)

I certify that during the academic years___________________________________

(Name in full)

____

has personally performed and properly recorded in a suitable notebook__________ experiments in the physical laboratory of____________________School.

The time given to laboratory work has been __________ periods of ______ minutes each, equivalent to ______ periods of 60 minutes each.

The time given to lectures and recitations has been __________ periods of ______ minutes each, equivalent to ______ periods of 60 minutes each.

Half the number of hours given to laboratory work plus the full number of hours given to lectures and recitations is equal to ______ hours.[75]

*(Signed)*______________________________

Teacher of Physics.

The teacher may here enter the final grade of ______ per cent.

CHEMISTRY.

One unit.

The requirement in chemistry was framed by a representative commission, the appointment of which was authorized by the College Entrance Examination Board in April, 1911. The report of the commission was adopted by the board in April, 1913.[76]

The following requirement has been planned so as to make it equally suitable for the instruction of the student preparing for college and for the student not going beyond the secondary school. To this end the requirement is divided into two parts.

Part I contains a minimum list of essential topics. In the examination papers there will be no optional questions on this part, and these questions will count 60 per cent.

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[75] To meet the board's requirement the number of hours here entered must be at least 120.

[76] An account of the commission and its work will be found in the Thirteenth Annual Report of the Secretary of the College Entrance Examination Board, pages 6–17.

Part II is supplementary, and provides for a more extended programme along three main lines, namely:

A. Descriptive chemistry.

B. Chemical principles or theories.

C. Applications of chemistry in the household or in the arts.

This part of the examination paper offers a choice of questions and will count 40 per cent. In his answers the candidate must confine himself to two out of three groups of questions.

The teacher may thus devote the time to any two of the three groups indicated, and so adapt his course to local conditions or personal preference. It should be clearly recognized that thoroughness in teaching must not be sacrificed to an attempt to cover the topics named in all three of the groups..

It is required that the candidate's preparation in chemistry should include:

(1) Individual laboratory work, comprising at least 40 exercises selected from a list of 60 or more, not very different from the list below.

(2) Instruction by lecture-table demonstrations, to be used mainly as a basis for questioning upon the general principles involved in the pupil's laboratory investigations.

(3) The study of at least one standard textbook, to the end that the pupil may gain a comprehensive and connected view of the most important facts and laws of elementary chemistry.

PART I. MINIMUM LIST OF ESSENTIALS.

The following outline includes such representative topics as should be studied in the classroom and laboratory. The material is, for the most part, common to all elementary textbooks and laboratory manuals. For convenience of statement the topics are classified without reference to the proper order for presentation. The actual order will be determined by that employed in the textbook, or by the individual teacher himself.

The preparation, properties and uses of the following elements—hydrogen, oxygen, atmospheric nitrogen, chlorine; the properties and uses of carbon (including allotropic forms), sulphur, sodium, zinc, iron, copper, and gold. In the case of the metals mentioned, the action of air, of water, and of dilute acids should be discussed.

The preparation (one method), properties and uses of the following compounds—hydrochloric acid, sodium chloride, silver chloride; sulphur dioxide, sulphuric acid (preparation by the contact process), hydrogen sulphide; calcium phosphate; carbon dioxide, including its relation to vital processes; carbon monoxide; calcium carbonate, calcium oxide, calcium hydroxide); ammonia, ammonium hydroxide; nitric acid (including action on copper), nitric oxide; sodium nitrate, potassium nitrate; the properties and uses only of sodium carbonate and sodium acid carbonate.

The preparation, properties and uses of a few common organic substances, namely petroleum products, ethyl alcohol, acetic acid, glucose, cane-sugar and starch.

The properties of the elements and compounds studied should be those which serve for recognition, or those which are related to some important use. The uses considered should be those of household or industrial importance.

A detailed study of air, including the nitrogen, oxygen, carbon dioxide, and water vapor; water and its properties; impure water and its relation to health, its treatment by boiling, distillation, and filtration.

Simple types of chemical action—direct combination; decomposition; displacement of an element in a compound by another element; double decomposition; radicles as units in chemical action; order of activity of the common metallic elements; acids, bases, neutralization, and salts; the identification of a few substances by means of characteristic properties and reactions; quantitative character of chemical action as illustrated by one or two experiments.

The laws of Boyle and Charles, quantitatively, with simple problems in each separately; instances and statement of the laws of conservation of mass, conservation of energy, and definite proportions; illustration of the law of multiple proportions; reacting weights of elements; elementary statement of the atomic theory and its relation to the law of definite proportions; significance and use of atomic weights.

Valence in an elementary way; nomenclature as illustrated by simple inorganic compounds; use of formulæ in constructing and balancing equations; simple exercises in chemical arithmetic, the atomic weights and the formulæ of the compounds involved being given, calculation of (*a*) percentage composition, (*b*) weights of substances concerned in chemical reactions, (*c*) the volume of a gas resulting from a chemical reaction (the weight of a liter of the gas under the conditions of the experiment being given).

Energy change as characteristic of chemical action; combustion (in an elementary way); effect of concentration as illustrated by combustion in air and in oxygen; flame; oxidation by oxygen, and reduction by hydrogen and by carbon; catalysis, as illustrated by one or two simple examples of contact action; solution, saturated solution, degrees of solubility; separation of solids from solution, precipitation including crystallization (not crystallography); electrolysis, as illustrated by one or two cases.

Chemical terms should be defined and explained, and the pupil should be able to illustrate and apply the ideas they embody. The theoretical topics are not intended to form separate subjects of study, but should be taught only so far as is necessary for the correlation and explanation of the experimental facts.

It should be the aim of the teacher to emphasize, as opportunity offers, the essential importance of chemistry to modern civilization.

PART II. SUPPLEMENTARY REQUIREMENT.

A. Descriptive: The chief physical and chemical characteristics, the preparation and the recognition of the following *elements:* Oxygen (ozone), hydrogen, carbon, nitrogen, chlorine, bromine, iodine, sulphur, phosphorus, sodium, aluminium, zinc, iron, lead, and copper.

The chief physical and chemical characteristics, the preparation and the recognition of some important *compounds,* namely, the compounds mentioned in Part I, and also the following substances: Hydrogen peroxide; nitrous oxide; nitrogen peroxide; hypochlorous acid and one salt; sulphurous acid and sodium sulphite; the sulphate and the chloride of calcium; aluminium sulphate and alum; the sulphate and the chloride of zinc; ferrous sulphate, ferrous chloride, ferric chloride, ferric oxide and ferric hydroxide; the acetate and the carbonates of lead; litharge and red lead; cupric sulphate; the chlorides of mercury (preparation not required); silver nitrate.

In the case of the elements and compounds listed in both Part I and Part II, a more extended study is expected to be made for Part II.

B. Principles: Natural grouping of the elements; solvents and solubility of gases, liquids and solids, saturation; correction of gas volumes; law of multiple proportions; the atomic theory as a means of interpreting the fundamental chemical laws; two cases illustrating Gay Lussac's law of combining volumes; Avogadro's hypothesis derivation of the hydrogen molecule as H_2, proportionality between weights of like volumes of gases and molecular weights; simpler aspects of the theory of electrolytic dissociation in so far as necessary to explain electrolysis, neutralization and reactions to litmus paper of copper sulphate and sodium carbonate solutions; reversibility of chemical actions.

C. Applications: In the treatment of all the above topics, due consideration should be given to the more familiar industrial and household applications of the substances involved. In addition, the following topics may be considered in some detail: treatment of waters for laundry and industrial purposes; soaps and washing powders; common fuels; operation of household stoves and furnaces; general classes of foods; simpler metallurgy of iron and steel; electrolysis as applied to electroplating and the refining of metals; the simple chemistry of the internal combustion engine.

The examination questions will be confined to the above topics, but it must be understood that the College Entrance Examination Board does not suggest that the instruction be thus limited. In case the number of assigned periods is above the average, the teacher may include a larger amount of descriptive and theoretical chemistry, or interesting applications of chemistry to subjects like the removal of grease, rust, ink, and mildew stains; glass; cement; typical alloys; metallurgy of zinc and aluminium; important fertilizers; photography; organic compounds like wood alcohol, ether, chloroform, carbon tetrachloride, carbon disulphide and explosives.

List of Suggested Experiments in Chemistry.[77]

1. Heating of substances in air.
2. Weight change on heating a metal in air.
3. Products obtained by heating "red precipitate."
4. Preparation and properties of oxygen.
5. Weight of a liter of oxygen.
6. Interaction of metals and acids.
7. Preparation and properties of hydrogen.
8. Reduction of copper oxide.
9. Equivalent weight of zinc (or magnesium) by displacing hydrogen.
10. Distillation of water.
11. Solvent power of water.
12. Water of crystallization.
13. Determination of water of crystallization.
14. Preparation and properties of chlorine.
15. Preparation and properties of hydrogen chloride.
16. Action of sodium on water and recognition of products formed.
17. Neutralization of sodium hydroxide with hydrochloric acid.
18. Determination of concentration of hydrochloric acid by titration.
19. Combining weights of zinc and chlorine (or of zinc and oxygen).
20. Flame tests.
21. Tests for three common acids.

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[77] Other experiments of similar standard may be substituted.

22. Preparation of soluble salts.
23. Preparation of insoluble salts.
24. Boiling points of solutions.
25. Freezing points of solutions.
26. Preparation of pure sodium chloride.
27. Incomplete reactions.
28. Forms of sulphur.
29. Preparation and properties of sulphur dioxide.
30. Preparation and properties of hydrogen sulphide.
31. Preparation of metallic sulphides.
32. Volumetric composition of air.
33. Preparation and properties of ammonia.
34. Preparation and properties of nitric acid.
35. Preparation and properties of nitric oxide.
36. Preparation and properties of nitrous oxide.
37. Preparation of potassium nitrate (crystallization).
38. Preparation and properties of bromine.
39. Preparation and properties of iodine.
40. Comparison of the halogen acids.
41. Preparation of charcoal.
42. Properties of carbon.
43. Preparation and properties of carbon dioxide.
44. Hard waters.
45. Molecular weight of carbon dioxide.
46. Preparation and properties of carbon monoxide.
47. Preparation and properties of lime.
48. Cobalt nitrate tests.
49. Relative replacement of common metals (electrochemical series).
50. Equivalent of silver.
51. Tests for iron salts.
52. Reduction of ferric to ferrous chloride.
53. Oxidation of ferrous to ferric chloride.
54. Qualitative separation of lead, silver, and mercury.
55. Fermentation.
56. Preparation of ethyl acetate.
57. Soap making.
58. Testing of milk for nutrients.
59. Determination of carbon dioxide in air.
60. Explosive mixtures of gasoline and air.

Laboratory Notebook.

The College Entrance Examination Board does not require the submission of the candidate's laboratory notebook as part of the examination in chemistry. The notebook, if required by the college or scientific school that the candidate wishes to enter, should be forwarded directly to the proper authorities of that institution. It should contain:

(1) A brief description in the pupil's own words of the materials and apparatus employed and the operations performed in each experiment, sketches being used to represent apparatus where this is practicable.

(2) Records in the pupil's own words of phenomena as actually observed in the course of each experiment.

(3) A statement of the important conclusions which may be properly drawn from the phenomena as observed.

Special importance should be attached to the evidence which the notebook affords of independent and careful thought on the part of the pupil, as indicated by ability to recognize and express clearly the significance of the work actually performed. Statements which have been merely transcribed from textbooks or manuals are by no means satisfactory. The notebook should contain an index of experiments.

Teacher's Laboratory Certificate.

The laboratory certificate, if required by the college or scientific school that the candidate wishes to enter, should be forwarded directly to the proper authorities of that institution.

(*School*) ____

(*Post Office address of school*) ______________________________

(*Date*) ____________________________

(*College or scientific school that candidate purposes entering*) ____

I certify that during the academic years ______________________________

(*Name in full*) ____

has personally performed and properly recorded in a suitable notebook ________ experiments in the chemical laboratory of ________________ School, the experiments being not very different from the list suggested by the College Entrance Examination Board, and that the notebook constitutes a true and original record of the experiments.

The time given to the laboratory work has been ______ periods of ______ minutes each, equivalent to ______ periods of 60 minutes each.

The time given to lectures and recitations has been ______ periods of ______ minutes each, equivalent to ______ periods of 60 minutes each.

Half the number of hours given to laboratory work plus the full number of hours given to lectures and recitations is equal to ______ hours.[78]

(*Signed*) ____________________________,

Teacher of Chemistry.

BIOLOGY, BOTANY, ZOÖLOGY.

One unit each.

The requirement in biology, botany, and zoölogy was framed by a representative commission, the appointment of which was authorized by the College Entrance Examination Board in April, 1914. The report of the commission was adopted by the board in November, 1915.[79]

INTRODUCTION.

The following outline includes the principles of biology, or of botany, or of zoölogy which are indispensable to a general survey of these sciences. It not intended to indicate order of study of the topics—this must be left to t teacher and the textbook.

The courses named below should be developed on the basis of laborato study guided by definite directions. This should be supplemented by the pa ful study of at least one modern elementary textbook. At least one-half of the time should be devoted to the practical studies of the laboratory. Pupils should be encouraged to do supplementary work in the line of natural history, *especially* if good nature studies have not preceded the high-school course. A notebook with carefully labeled outline drawings of the chief structures studied anatomically, with notes on demonstrations, and in explanation of drawings, with descriptions of experiments, with dates and with index, should be prepared by the pupil in connection with practical work.

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[78] To meet the board's requirement the number of hours here entered must be at lea 120.

[79] An account of the commission and its work will be found in the Fifteenth Annual R port of the Secretary of the College Entrance Examination Board, page 12.

The College Entrance Examination Board does not require the submission of the laboratory notebook as part of the examination. The notebook, or the laboratory certificate, if required by the college or scientific school that the candidate wishes to enter, should be forwarded directly to the proper authorities of that institution. A suitable blank form for the laboratory certificate may be obtained from the secretary of the board.

This syllabus provides for four different types of courses:

Course I—a year of biology with emphasis on the applications of biology to human welfare.

Course II—a year of biology with emphasis on the structure and functions of plants and animals.

Course III—a year of botany.

Course IV—a year of zoölogy.

Examination in Biology.

The examination papers in biology (Courses I and II) will consist of three groups of five questions each, and the student must choose at least *two* questions from *each* group; four other questions may be chosen from any of the groups.

Group 1 will consist of five questions on the structure of plants and animals.

Group 2 will consist of five questions on physiology, life history, and classification.

Group 3 will consist of five questions on applications of biology to human welfare.

Students in Course I who wish to prepare for examination with special reference to the applications of biology to human welfare should study the topics (except those marked *Optional*) under A, B, C, and F III of the Outline of Work below that relate to one alga, three fungi (bacteria, yeasts, molds), one angiosperm, one protozoan, one insect, two vertebrates (human body and frog recommended), together with a consideration of cells and heredity.

Students in Course II who wish to prepare for examination with special reference to the structure and functions of plants and animals should study the topics (except those marked *Optional*) suggested below under A, B, C, F, I, and F II that relate to at least one alga, one fungus, one moss *or* one fern, two angiosperms, one protozoan, an annelid *or* a crustacean, two insects and two vertebrates, together with the economic aspects of the forms studied, and the simple principles of classification of one plant group (*e. g.*, angiosperms) and of one animal group (*e. g.*, insects *or* vertebrates).

The examination in botany will consist of three groups of five questions each, and the student must choose at least *three* questions from *each* group; a tenth question may be chosen from any of the groups.

Group 1 will consist of five questions on the structure of plants.

Group 2 will consist of five questions on physiology, life history, and classification of plants.

Group 3 will consist of five questions on the relation of plants to human welfare.

Students in Course III who take a year's course in botany should be prepared on all topics, including those marked *Optional*, under the following heads: A I, B I, C I and III, and F I.

Examination in Zoölogy.

The examination in zoölogy will consist of three groups of five questions each, and the student must choose at least *three* questions from *each* group; a tenth may be chosen from any of the groups.

Group 1 will consist of five questions on the structure of animals.
Group 2 will consist of five questions on physiology, life history, and classification of animals.
Group 3 will consist of five questions on the relation of animals to human welfare.

Students in Course IV who take a year's course in zoölogy should be prepared on all topics, including those marked *Optional*, under the following heads: A II, B II, C II and III, D II, and F II.

Outline of Work.

A. STRUCTURE.

I. *Plants.*

1. Suggested material for laboratory study: Pleurococcus, spirogyra, bacteria, yeasts, molds, a moss, a fern, a pine, a monocotyledon, three types of dicotyledons.

2. Suggested topics for study of higher plants:

(*a*) *The seed.*—Three types (dicotyledon with and without endosperm and monocotyledon); food supply (experimental determination of its nature and value); germination and growth of embryo into a seedling.

(*b*) *The root.*—Gross anatomy of a typical root; position and origin of the secondary roots; root hairs; root cap; and growing point.

(*Optional*) General structure and distribution of the leading tissues of the root.

(*c*) *The shoot.*—Gross anatomy of a typical shoot, including stem, leaf, and bud; annual growth.

(*Optional*) General structure and distribution of the leading tissues of the shoot.

(*d*) *The flower.*—Structure of a typical flower; functions of the parts; comparative study of three or more types.

(*e*) *The fruit.*—Structure of a typical fruit; functions of the parts; comparative study of four or more types.

(*f*) *The cell* (to be studied in connection with the preceding topics).—Cytoplasm, nucleus, cell sap, cell wall.

II. *Animals.*

1. Suggested material for laboratory study: a protozoan (*e. g.* paramecium or amoeba), a coelenterate (*e. g.* hydra or sea anemone), an annelid (*e. g.* an earthworm or nereis), two types of insects (*e. g.* butterfly, grasshopper, beetle, bee), crayfish, *or* clam *or* other mollusk, two vertebrates (fish *or* frog, bird *or* mammal).

2. Suggested topics for the study of animals: general plan of extern structure of all the forms, and of the internal structure of crayfish annelid, and of a vertebrate.

(*Optional*) Tissues should be examined first with the naked eye, i such a structure as a leg of frog or other animal, and then with a micr scope a demonstration should be given of the relations of cells and inte cellular substance in epithelium and cartilage, and if possible in othe tissues.

B. Physiology.

Note.—Although for convenience of reference, the physiological topics are here grouped together, they should by no means be studied by themselves and apart from structure.

I. *Plant physiology.*

(*a*) Functions of water in the plant; absorption (osmosis); path of transfer; transpiration; turgidity and its mechanical value.

(*b*) Photosynthesis; dependence on chlorophyll, light, and carbon dioxide; evolution of oxygen.

(*c*) Respiration; necessity for oxygen; evolution of carbon dioxide.

(*d*) Enzymes; digestion and the translocation of foods; other reactions.

(*e*) (*Optional*) Nature of stimulus and response; irritability; geotropism; heliotropism; hydrotropism.

II. *Animal physiology.*

The general physiology of the types in A II 1 above, involving the essentials of food getting, digestion, absorption, circulation, respiration, cell metabolism, secretion, excretion, locomotion, and nervous functions. This study should apply comparatively the elements of human physiology. So far as practical, structure and function should be studied together.

III. *Comparison of the general life-processes in plants, animals and man.*

C. Reproduction, Life-history, and Classification.

I. *Plants.*

1. Asexual and sexual reproduction in so far as it occurs in each of the forms studied in A I 1 above; pollination and fertilization; alternation of generations in mosses and ferns.

2. Classification of plants into the great divisions and prominent subdivisions of angiosperms.

Note.—The teaching of classification should be by practical work, so as to train the pupil to recognize plants and to point out the chief taxonomic features. The meaning of species, genera, and the larger groups should be developed by constructive practical work with representatives of plant orders. So far as possible familiar forms should be used.

The ability to use manuals for the determination of the species of flowering plants is not considered essential in this course, although it is regarded as desirable. It should not be cultivated to the exclusion of any part of the course, but may well be made voluntary work for those showing a taste for it.

The preparation of an herbarium is not required. If made, it should not constitute a simple accumulation of species, but should represent some distinct idea of plant associations, or of morphology, or of the representation of the groups, etc. Protection of wild flowers should be encouraged.

II. *Animals.*

1. Asexual reproduction of a protozoan (preferably paramecium); reproduction and regeneration in hydra; typical life-histories of insects; the very general external features of embryological development of a fish or a frog; metamorphosis of an amphibian.

(*Optional*) Alteration of generations in hydroids.

C. REPRODUCTION, LIFE-HISTORY, AND CLASSIFICATION—Continued.

II. ANIMALS—Continued.

2. The classification of animals into phyla and leading classes (except the modern classification of the worms) and the great characteristics of these groups. In the case of insects and vertebrates the characteristics of the prominent orders.

NOTE.—The teaching of classification should be by practical work, so as to train the pupil to recognize animals and to point out the chief taxonomic features. The meaning of species, genera, and the larger groups should be developed by constructive practical work with representatives of insect or vertebrate orders. So far as possible familiar forms should be used.

III. 1. Mendelian laws; heredity in plants and animals.

2. The general cellular nature of germ-cells; fertilization and cell division in developing eggs.

D. (*Optional*) NATURAL HISTORY (Ecology).

I. *Plants.*

Modification of parts for special functions: *e. g.*, seed dispersal; cross-pollination; leaf exposure; mesophytes; hydrophytes; halophytes; xerophytes; climbers; epiphytes; parasites; saprophytes; insectivora.

The topics in ecology, like those in physiology, are to be studied not by themselves, but along with the structures with which they are most closely related.

II. *Animals.*

The natural history (including external structure in relation to adaptions, life histories, geographical range, relations to other plants and animals, and economic relations) of common vertebrates and invertebrates, so far as the representatives of these groups are obtainable in the region where the course is given.

Actual examination of common animals should be supplemented by reading. It is not expected that there will be time for making extensive notebooks on this natural-history work. So far as time permits, drawings and notes should be made.

E. (*Optional*) HISTORY AND THEORY OF BIOLOGY.

I. Some leading facts regarding the epoch-making discoveries of biological history and the careers of such eminent naturalists as Linnæus, Darwin, Huxley, Pasteur, and Agassiz should be presented.

II. The prominent evidences of relationship, suggesting evolution within such groups as the angiosperms, the decapods, the insects, and the vertebrates should be demonstrated. A few facts regarding the struggle for existence, adaptation to environment, variations of individuals, and man's selective influence should be pointed out.

F. APPLICATIONS OF BIOLOGY TO HUMAN WELFARE.

I. *Plants.*

1. Importance of plants to man for food, clothing, medicine, fuel, furniture, building, and decoration. Examples of each.

2. Importance of forests and other vegetation in giving off moisture, in preventing floods (with consequent loss of life and property), and in maintaining a more uniform flow of streams. Danger to forests from fire, insects, and improper methods of lumbering methods of forest protection; necessity for reforesting; work of the Department of Agriculture; need of forest conservation.

3. Plant propagation and plant breeding.

4. (*Optional*) Soils in their relation to plant growth. Improvements of soils by tillage, by fertilizers, and by the rotation of crops.

F. APPLICATIONS OF BIOLOGY TO HUMAN WELFARE—Continued.

II. *Animals.*

1. Importance of protozoa as food for aquatic animals; as a cause of certain diseases.

2. Economic importance of grasshoppers, butterflies, moths, bees, silkworms, and other insects beneficial or injurious to man; methods of exterminating injurious insects.

3. The relation of mosquitoes to malaria and yellow fever, and of the house-fly to typhoid and other diseases; methods of extermination of flies and mosquitoes; work of the National and State Governments in the extermination of insect pests.

4. Importance to man of several of the commonest food fishes; necessity and methods of fish protection; work of the National and State Governments in protecting and propagating food fishes.

5. Value of birds to agriculture as destroyers of harmful insects, weeds, and certain rodents; value as scavengers; harm done by certain birds, such as the English sparrow and certain hawks; economic importance of domestic birds; necessity for bird protection. Work of National and State Governments and Audubon Societies.

III. *Micro-organisms and Human Welfare; Hygiene and Sanitation.*

NOTE.—In the study of bacteria, yeasts, and molds there should be as much laboratory work as possible.

1. Beneficial and injurious effects of yeasts and molds.

2. Beneficial forms of bacteria; nitrogen-fixing bacteria; soil bacteria; dairy bacteria; bacteria in relation to the preservation of foods by canning, salting, drying, and pickling.

3. The more important diseases due to bacteria and other micro-organisms; manner of infection.

4. Prevention of disease by the individual.

(*a*) Fresh air; pure food; pure water; healthful exercise; sufficient sleep.

(*b*) Cleanly habits at home and in public places; dangers of dust; proper methods of dusting and sweeping; care of home premises and of foods; treatment of wounds; cooperation with civic authorities.

5. Prevention of disease by civic authorities.

(*a*) Care of streets, public places, water supply, sewage and drainage; supervision of milk and other foods.

(*b*) Vaccinations; antitoxins; quarantine; disinfection; diagnosis of infectious diseases.

6. Personal hygiene: (*a*) habits of eating; (*b*) care of teeth; (*c*) care of skin; (*d*) hygiene of skeleton and muscles; (*e*) habit formation.

GEOGRAPHY.

One Unit.

The requirement in geography is based on the report of the Committee on Physical Geography of the Science Department of the National Education Association.

The following outline includes only the most essential facts and principles of physical geography, which must be studied in the classroom and laboratory. The order of presentation is not essential; it is recommended, however, that the topics be treated in general in the order given.

OUTLINE:

Recognizing that the field of physical geography in secondary schools should include (1) the earth as a globe, (2) the ocean, (3) the atmosphere, and (4) the land, the following outline is planned to cover these several large topics, with the further recommendation that the time allowance be proportionately increased in the order named:

The Earth as a Globe—
- Shape of earth, how proved, consequences of shape.
- Size: how earth is measured; effects of size.
- Rotation: character of motion; latitude, longitude, and time.
- Revolution: rate, path, direction, and the consequences.
- Magnetism: compass, poles, variation.
- Map projection.

The Ocean—
- Form, divisions, and general characteristics of the ocean.
- Depth, density, temperature of ocean waters.
- Characteristics of ocean floor.
- Distribution of life in oceans.
- Movement of ocean waters.
  - Waves—cause and effect.
  - Currents—causes, proofs of causes, important currents, effect of currents.
  - Tides—character of motion, cause of tides, variation of tides, bores.
- Work of the ocean.
- Classes of shore lines and importance of shore lines.

The Atmosphere—
- Composition and offices of atmosphere.
- Instruments used in study of atmosphere.
- Temperature.
  - Source and variation of atmospheric temperatures.
  - Isothermal charts of world, January and July, with special study of isothermals of northern and southern hemispheres, of location of heat equator, of cold pole, of crowded isotherms, etc.
- Pressure.
  - Measurement of pressure.
  - Use of pressure in altitude determinations.
  - Relation to temperature.
  - Study of isobars on United States Weather Map.
  - Distribution of pressure over world in January and July.
  - Relations of isobars to isotherms.
- Circulation of atmosphere.
  - Winds, classes, directions, causes, effects.
- Moisture.
  - Source, forms, measurement, precipitation.
- Storms.
  - Paths and characters of storms of United States.
  - Daily weather at different seasons.
  - Relation of storms to general weather conditions.
  - Relation of weather to climate.

The Land—
- Several features of land as compared with ocean.
- Distribution of land.

The Land—Continued.
- Map representation of topography.
- Changes in land forms, effects of elevation and depression.
- Plains.
    - Kinds of plains.
    - Characteristics of different kinds.
    - Development of plains.
    - Coastal plain of eastern United States in parts.
    - Alluvial plains, their formation and importance.
    - Relation of life conditions to different forms of plains.
- Plateaus.
    - Young plateaus.
    - Dissected plateaus.
    - Old plateaus.
    - Broken plateaus.
- Mountains.
    - Block mountains.
    - Folded mountains.
    - Domed mountains.
    - Massive mountains.
- Volcanoes.
    - Distribution.
    - Character at different stages.
- Rivers.
    - Life history of river—work of rivers, topography of valleys at different stages, lakes and lake basins.
    - Revived rivers.
    - Drowned valleys.
    - The great drainage basins of the United States.
- Glaciers.
    - Existing ice sheets.
    - Kinds of glaciers.
    - Work of glaciers.
    - Characteristics of glaciated area of northern United States.

Summary—
- Relation of man, plants, and animals, to climate, land forms, and oceanic areas.

The outline given can but present the larger topics to be covered, and in a way suggest the point of view desired. Each topic should be treated so as to show its casual relations to other topics, and, so far as possible, the effects of earth features on life conditions should be emphasized.

The candidate's preparation should include:

(1) The study of one of the leading secondary textbooks in physical geography, that a knowledge may be gained of the essential principles, and of well-selected facts illustrating those principles.

(2) Individual laboratory work, comprising at least 40 exercises selected from a list not very different from the one given below. From one-third to one-half of the candidate's classroom work should be devoted to laboratory exercises. In the autumn and spring field trips should take the place of laboratory exercises.

List of Possible Exercises.[40]

Earth as a Globe—

Construct a diagram showing inclination of earth's axis, and effects of an axis at right angles, and parallel to plane of orbit. [1]

Cause of day and night, and extent of sunlight over surface. [1]

Construct a diagram showing position of earth, moon, sun at the several phases of moon. [1]

Construct a series of lines to some adopted scale, showing circumference and diameter of earth, and distance of several leading large cities from New York. [1]

Determination of latitude, north and south line, and high noon. [1]

Ocean—

Study of ocean current maps. [1]

Study of tide charts. [1]

Study of types of shore lines. [2]

Study of positions of lighthouses, life-saving stations, and large cities in relation to southern Atlantic shore. [1]

Study of map of world, showing heights of land and depths of sea. [1]

Explain selected steamer routes across Atlantic and Pacific. [1]

Atmosphere—

Determination of altitude of hill by barometer. [1]

Determination of dew point. [1]

Comparison of January and July temperature of 40° N. and S. Lat. [2]

Location and migration of heat equator and cold pole. [2]

Comparison of temperature over land and water at different seasons. [2]

Study distribution of wind systems by seasons, and compare with pressure conditions. [2]

Make isotherm and isobar maps from furnished data. [2]

Find average wind directions about a storm center. [1]

Make complete weather maps from furnished data. [2]

Study distribution of cloudiness and rainfall about a storm center. [1]

Predict weather conditions from data furnished. [1]

Find average rate and direction of motion of storm centers. [1]

Study condition of "cold waves" and "northeasters." [1]

Land—

Comparison of areas to scale. [1]

Making cross sections of contour maps to scale. [4]

Cross sections of hachure map, and changing hachure to contour map. [2]

Writing description of models. [4]

Writing description of picture and accompanying map. [2]

Construction of river profile. [1]

Making drainage map of United States. [1]

Written description of selected maps illustrating classes of land forms. [4]

Planning a journey and describing country to be seen. [1]

Locating illustrations of common land-forms on some special contour map. [1]

Four excursions in autumn, described in detail. [8]

Four excursions in spring, described in detail. [8]

The candidate's practical exercises should be distributed about as follows: Mathematical geography 5, ocean 5, atmosphere 12, land 18. In connection with them the candidate should prepare a notebook in which are recorded with dates the steps and the results of his laboratory exercises. This book should contain an index of subjects, and should be a true and original record of the pupil's work.

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[40] Numbers in brackets indicate the value that should be given in estimating the total number of forty.

The College Entrance Examination Board does not require the submission of the laboratory notebook as part of the examination in geography. The notebook, or the laboratory certificate, if required by the college or scientific school that the candidate wishes to enter, should be forwarded to the proper authorities of that institution. A suitable blank form for the laboratory certificate required may be obtained from the secretary of the board.

DRAWING.

Freehand Drawing.

One unit.

The requirement in freehand drawing is based upon the statement of entrance requirements in this subject as contained in the catalogues of colleges and universities represented in the College Entrance Examination Board.

The candidate's preparation in freehand drawing should be directed toward training him in accurate observation and in definite and truthful representation of form, without attempt to represent color or color values.

The candidate should be able to draw correctly and with lines of good quality simple form in correct perspective in the size in which it is felt in the plane of the drawing, or larger or smaller. It is recommended that pupils should be taught to draw from the object itself rather than from the flat.

Correctness of proportion and accuracy in the angles and curves and structural relations of the parts of every object drawn are of the highest importance.

The elementary principles of perspective are to be thoroughly learned, and the candidate should be able to apply them in freehand drawing from the object or from the imagination.

No definite prescription as to method of teaching is made. The examination will test the preparation of the candidate in the following points:

1. Ability to sketch from the object with reasonable correctness as to proportion, structure, and form. It is recommended that the subjects drawn include simple geometrical objects and simple natural objects, such as living plant forms.
2. Ability to sketch freehand from dictation with reasonable accuracy any simple geometrical figure or combination of figures.
3. Ability to represent accurately in perspective a simple geometrical solid of which projection drawings are given, and ability to make consistent projection drawings of a simple geometrical solid of which a perspective representation is given.
4. Ability to answer questions in regard to the principles involved in making these drawings.

Mechanical Drawing.

One unit.

The requirement in mechanical drawing was framed by a representative commission, the appointment of which was authorized by the Joint Committee May, 1915. The report of the commission was adopted by the College Entrance Examination Board November, 1915.[81]

INTRODUCTION.

The commission appointed to formulate the definition of the requirement in mechanical drawing is of the opinion that in the time available for the subject in most secondary schools only very elementary courses in mechanical drawing should be undertaken, and that thoroughness in fundamentals should be the main feature of such courses. Thus, for example, instead of requiring the student to make elaborate drawings, inked, tinted, and shaded, the effort should be, first of all, to teach him the correct methods of making drawings in pencil. When a student is learning to use the drawing instruments he may acquire bad habits of work which will cling to him long afterwards, and teachers of mechanical drawing should be particularly watchful during the early part of a course to insist that the student use only the correct methods until they become second nature to him. Likewise, in studying any form of projection, the object should be to understand the fundamental principles rather than to make elaborate drawings. For this reason, a large variety of problems which involve the projections of *simple* objects in many different positions is better than a few elaborate problems which involve *complex* objects in simple positions. In drawing plans and elevations of complex or other unfamiliar objects the student is in need of constant help from the instructor, but, once he understands the principles of projection, he can reasonably be required to draw the projections of any simple solid in any specified position with very little, if any, help from the instructor. Work which is merely copying or which can be done only by depending constantly upon help from the instructor is not the kind of training desired. A course in mechanical drawing should be one in the application of fundamental principles and not one in copying.

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[81] An account of the commission will be found in the Fifteenth Annual Report of the secretary of the College Entrance Examination Board, page 12.

REQUIREMENT.

The commission has formulated the definition of the requirement with the foregoing objects in view, and it is believed that the work of preparation for the requirement can be accomplished in approximately two hundred periods of sixty minutes each.

1. *Use of Drawing Instruments.*—Knowledge of the proper methods of using the T-square, triangles, and other drawing instruments, with special reference to their use in drawing parallel lines, erecting perpendiculars, and in drawing arcs of circles and irregular curves. *Skill* as judged by the accuracy, neatness, and finish of drawings submitted prior to the examination.

It is of great importance that the student should form correct habits of work when learning to use the drawing instruments, and that he should aim from the beginning to make his work in *pencil* clear cut and accurate regardless of whether or not it is to be inked.

2. *Geometric Constructions* commonly needed in drafting, particularly those which involve special methods of using instruments singly or in combination. Accuracy and speed in such methods are desired rather than mere practice in the construction of useless geometric designs. A knowledge of the geometric constructions of the common curves, such as the ellipse, the parabola, and the hyperbola, is included in the requirements.

3. *Orthographic Projection.*—Drawings of solids in specified positions in the third angle of projection as given in the examination by descriptions, isometric sketches, or models. The student should be able to determine sections of solids when the cutting planes are perpendicular to at least one plane of projection and to develop any portion of the surface of the solid so cut.

Solids may be irregular in shape, hollow, grooved, or with raised strips or blocks on their surfaces. Sections should be shown not only in projection but in their true outlines.

4. *Isometric Projection.*—Isometric drawings of solids with dimensions properly indicated. Isometric drawing is used mainly as a substitute for perspective

drawing, but the student should understand that the drawing of an object thus represented is exactly the same as an orthographic projection of the object in a certain position with respect to the planes of projection, and he should determine what this position is when first beginning the subject of isometric projection. The student should be prepared to construct an isometric scale, and, if required, to use it instead of a true scale.

5. *Working Drawings* of simple objects with special reference to—
   - (*a*) Conventional methods of representing sections.
   - (*b*) Proper methods of showing dimensions.
   - (*c*) Some standard form of single stroke freehand lettering such as Reinhardt's. Letters should be of a uniform slope, height, and thickness of stroke, well proportioned, well spaced, and well finished.
   - (*d*) Proper method of putting on the drawing explanatory notes for materials, methods of construction, finish, etc.

6. *Plates.*—Drawings previously made by the candidate must be certified by the teacher (or school principal) under whose direction they were drawn, and sent, previous to the date of the examination in June, to the secretary of the College Entrance Examination Board, 431 West 117th Street, New York, N. Y.[a]

It is not desirable that all the plates should be inked; on the contrary, only enough inking should be required to afford sufficient practice in the use of the inking pen. A considerable portion of this inking should be done on tracing cloth placed over the pencil drawings. It is suggested that the inking be deferred in the course until the student can make satisfactory drawings in pencil, and that the time saved by not inking all of the plates be spent in a more thorough and extensive course in pencil drawing. The student's ability can be judged quite as well by the pencil work submitted as by the plates which he has finished in ink.

7. *Length of Course.*—The time required to accomplish the work outlined above is approximately 200 hours, not less than 150 hours of which should be spent in the class room under proper supervision.

DIRECTIONS TO CANDIDATES.

Instruments Needed for the Examination.—The following must be brought by the candidate to the examination:

A 6H drawing pencil, a pencil eraser, a pair of compasses, a protractor, two triangles (45° and 30°–60°), and an accurate 12-inch scale divided to sixteenths of an inch.

The drawing board, T-square, paper, and thumb tacks will be supplied to the candidate.

Additional Suggestions in Regard to Plates.—It will materially lighten the labor of examining the plates and facilitate more prompt and accurate reports if the candidates will give attention to the following suggestions:

1. The student should write or print on each plate (preferably near the lower right-hand corner) his name, the name of the school at which the plate was drawn, and the date on which it was completed.
2. The plates should be submitted flat, not rolled.
3. All of the plates of any candidate should be fastened together or placed in a single envelope or container.
4. Attached to the plates or envelope should be the certificate and a mailing address for returning the plates.
5. A convenient size for plates is approximately 11 by 15 inches.

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[a] A blank form of the certificate may be obtained from the secretary upon request.

MUSIC.

The requirement in music is based on the report of a joint committee representing the Eastern Educational Musical Conference and the New England Education League.

Harmony.

One unit.

The examination in harmony will consist only of a written test; there will be no test in performance. The candidate should have acquired:

(1) The ability to harmonize, in four vocal parts, simple melodies of not fewer than eight measures, in soprano or in bass—these melodies will require a knowledge of triads and inversions, of diatonic seventh chords and inversions, in the major and minor modes; and of modulation, transient or complete, to nearly related keys.

(2) Analytical knowledge of ninth chords, all nonharmonic tones, and altered chords (including augmented chords). [Students are encouraged to apply this knowledge in their harmonization.]

It is urgently recommended that systematic ear training (as to interval, melody, and chord) be a part of the preparation for this examination. Simple exercises in harmonization at the pianoforte are recommended. The student will be expected to have a full knowledge of the rudiments of music, scales, intervals, and staff notation, including the terms and expression marks in common use.

LIST OF COMPREHENSIVE EXAMINATIONS.

English	Cp.	
History	Cp.[83]	Ancient history. Medieval and modern. Modern European history. English history. American history and civil government.
Latin	Cp.2	Two-year Latin.
	Cp.3	Three-year Latin.
	Cp.4	Four-year Latin.
Greek	Cp.2	Two-year Greek.
	Cp.3	Three-year Greek.
French	Cp.2	Two-year French.
	Cp.3	Three-year French.
	Cp.4	Four-year French.
German	Cp.2	Two-year German.
	Cp.3	Three-year German.
	Cp.4	Four-year German.
Spanish	Cp.2	Two-year Spanish.
	Cp.3	Three-year Spanish.
	Cp.4	Four-year Spanish.
Mathematics	Cp.3	Elementary mathematics.
	Cp.4	Elementary and advanced mathematics.[84]
Physics	Cp.	
Chemistry	Cp.	

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[83] The comprehensive examination in history will be so arranged that a candidate may offer any historical field indicated above or any combination of two or more such fields.

[84] This examination may be so arranged that the candidate may offer in addition to elementary algebra and plane geometry one or more of the following branches: Solid geometry, logarithms and trigonometry, advanced algebra.

DESCRIPTION OF EXAMINATIONS.

Chemistry.

The examination will be adapted to the proficiency of those who have received systematic instruction in the principles of chemistry and their applications in a school course in which laboratory experiments are performed by the pupil. In order to make due allowance for diversity of instruction in different schools, the paper will contain more questions than the candidate is expected to answer, and will require the recognition of the phenomena and of the laws that are of general significance, and the illustration of such phenomena and laws by well-chosen examples. It will include not only questions on the chemistry of laboratory practice but also, in an elementary fashion, questions on the chemistry of the household and of industry.

English.

The purpose of this examination will be to test the ability of the candidate to define clearly in writing ideas gained both from books and from the life around him, and to read with accuracy and appreciation literature as varied in subject matter and form as that listed under "Uniform Entrance Requirements in English." Accuracy in the technique of writing will be insisted upon, but no paper will be considered satisfactory which does not show, in addition to this accuracy, that the student is able to think for himself and to apply what he has learned to the solution of unexpected problems. Although knowledge of the subject matter of the particular books prescribed in the "Uniform Entrance Requirements in English" is not necessary, yet the requisite ability can not be gained without a systematic and progressive study of good literature.

French.

The examination will be adapted to the proficiency of those who have studied French in school for two, three, or four years.

The paper will include passages of French prose or verse or both of varying degrees of difficulty to be translated into simple and idiomatic English. It will also contain passages in English of varying degrees of difficulty to be translated into French, and questions on grammar. Opportunity will be given to those who have had special training in French to show their ability to express themselves in that language.

German.

The examination will be adapted to the proficiency of those who have studied German in school for two, three, or four years.

The paper will include passages of German prose or verse or both of varying degrees of difficulty to be translated into simple and idiomatic English. It will also contain passages in English of varying degrees of difficulty to be translated into German, and questions on grammar. Opportunity will be given to those who have had special training in German to show their ability to express themselves in that language.

Greek.

The examination will be adapted to the proficiency of those who have studied Greek in a systematic school course of five exercises a week, extending through two or three school years.

The paper will include passages of simple Attic prose and of Homer to be translated at sight, and questions, based upon these passages, to afford the candidate means of showing his mastery of the ordinary forms, constructions, and idioms of the language. The paper will also include passages in English to be turned into Greek, and questions on prosody, on the Homeric poems, and on Homeric life.

History.

The paper will consist of five divisions made up of questions on ancient history, medieval and modern history, modern European history (including English history from 1760), English history, and American history (including civil government). The questions on each division will be partly prescribed and partly optional. If the candidate has studied but one of these divisions, he will be expected to answer the prescribed questions on that division, one of them being a map question. He should spend about two hours on these prescribed questions and should devote the remaining hour to the optional questions on the same division. If, on the other hand, the candidate has studied two or more of these divisions, he will be expected to answer, in addition to the prescribed questions on *one* of these divisions, questions on such other divisions as he may have studied.

In reading the papers, account will be taken of the year of the school program in which the subject has been studied. As further evidence of the candidate's proficiency, notebooks[86] may be submitted.

Latin.

The examination will be adapted to the proficiency of those who have studied Latin in a systematic school course of five lessons each week, extending through two, three, or four years.

The paper will include passages of Latin prose and verse of varying degrees of difficulty to be translated at sight, and passages for Latin composition of varying degrees of difficulty. Accompanying the different passages set upon the paper will be questions on forms, syntax, and the idioms of the language, as well as questions on the subject matter, literary and historical, connected with the authors usually read in schools.

Each candidate will choose those parts of the paper which are designed to test such proficiency in the language as may properly be acquired in two, three, or four years' study; but a candidate who has studied Latin four years may not select the more elementary parts of the paper. The proper parts will be indicated on the examination paper.

Mathematics.

The examination will be adapted to the proficiency of those who have had not less than the usual school course in elementary mathematics, comprising algebra through quadratics and plane geometry, and will also provide the means by which those who have extended their study to one or more branches of advanced mathematics, namely, solid geometry, logarithms and trigonometry, and advanced algebra, may exhibit their proficiency in any or all of these branches of mathematics. There will be two papers, one for those who have had no instruction beyond elementary mathematics, and one for those whose instruction has gone farther. Every candidate who has received instruction beyond elementary mathematics will be expected to take the paper containing questions on advanced mathematics, and to devote at least half his time to those questions which are based on the advanced mathematics he has studied.

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[86] The College Entrance Examination Board does not require or receive notebooks. Candidates wishing to submit notebooks must forward them directly to the proper authorities of the university, college, or scientific school concerned.

Physics.

The examination will be adaptetd to the proficiency of those who have had such a course of school training in the elementary facts and principles of physics as is described in the detailed definition of physics. In order to make due allowance for diversity of instruction in different schools, the paper will contain more questions than the candidate is expected to answer.

Spanish.

The examination will be adapted to the proficiency of those who have studied Spanish in school for two, three, or four years.

The paper will include passages of Spanish prose or verse or both of varying degrees of difficulty to be translated into simple and idiomatic English. It will also contain passages in English of varying degrees of difficulty to be translated into Spanish and questions on grammar. Opportunity will be given to those who have had special training in Spanish to show their ability to express themselves in that language.

CHAPTER II.

TYPICAL CURRICULA.

Curriculum of public elementary schools, Minneapolis, Minn.

Studies.	First grade.		Second grade.		Third grade.		Fourth grade.		Fifth grade.		Sixth grade.		Seventh grade.		Eighth grade.	
	Periods.	Minutes.	Periods.	Minutes.	Periods.	Minutes.	Periods.	Minutes.	Periods.	Minutes.	Periods.	Minutes.	Periods.	Minutes.	Periods.	Minutes.
Opening exercises	5	50	5	50	5	50	5	25	5	25	5	25	5	25	5	25
Recesses	10	150	10	150	10	150	10	150	10	150	10	150	10	150	10	150
Physical training	5	50	5	50	5	50	5	50	5	50	5	50	5	50	5	50
Hygiene	1	20	1	20	1	20	1	20	1	30	1	30	1	30	1	30
Phonics and word study	10	200	10	200	10	150	5	100	3	75	2	50	2	50	2	50
Spelling[1]	5	25	5	75	5	75	5	75	5	75	5	*75	5	*75	5	*75
Reading	25	400	20	365	15	365	5	250	5	240	5	220	4	*120	4	*120
Oral language	5	90	5	90	5	90	5	90	3	90	3	90	1	30	1	30
Written language	5	50	3	60	3	60	4	120	4	120	3	120	2	60	2	60
Grammar	....	......	....	......	....	......	....	......	....	......	....	......	3	180	3	180
Arithmetic	....	......	5	150	5	200	5	200	5	225	5	225	3	180	3	180
Geography and nature study	2	25	3	50	3	50	4	120	4	120	4	120	2	*70	2	*70
History and civics	....	......	....	......	....	......	3	60	3	60	3	75	3	*105	3	*105
Penmanship	5	60	5	75	5	75	5	75	5	75	5	75	3	60	3	60
Music	5	75	5	75	5	75	5	75	5	75	5	75	5	75	5	75
Drawing and construction work	4	80	3	90	3	90	3	90	3	90	2	60	3	60	2	60
Manual training or domestic art and science	....	......	....	......	....	......	....	......	....	......	1	60	1	180	1	180
Supervised study	....	......	....	......	....	......	....	150	....	150	....	150	....	150	....	150
Total	....	1,275	....	1,500	....	1,500	....	1,650	....	1,650	....	1,650	....	1,650	....	1,650

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[1] The amount of time given each week to home study in starred subjects is as follows: Grades VII and VIII—reading and spelling, 1½ hours; geography, ½ hour; history and civics, ¾ hour. Grades V and VI—spelling, 1 hour.

The following typical high-school curricula have been taken from Monroe's "Principles of Secondary Education," published by the Macmillan Co., 1914:

Curriculum of a Small Rural High School.

- First year:
  - English composition and literature.
  - Ancient history.
  - Latin.
  - Algebra.
- Second year:
  - English composition and literature.
  - Medieval history.
  - Latin.
  - Geometry.
- Third year:
  - English literature.
  - Modern English history.
  - Latin (or German).
  - Physics (or bookkeeping and business arithmetic).
- Fourth year:
  - English literature.
  - American history and government.
  - Latin (or German).
  - Chemistry (or typewriting and shorthand).

High-School Curriculum in City of Medium Size.

I. Ancient classical course.

- First year:
  - Latin.
  - Ancient history.
  - English.
  - Algebra.
- Second year:
  - Latin.
  - Greek.
  - English.
  - Geometry.
- Third year:
  - Latin.
  - Greek.
  - English.
  - Physics.
- Fourth year:
  - Latin.
  - Greek.
  - English.
  - (Elective.)

II. Modern language course.

- First year:
  - German.
  - Ancient history.
  - English.
  - Algebra.
- Second year:
  - German.
  - Medieval history.
  - English.
  - Geometry.
- Third year:
  - French (or Spanish) American history.
  - American history and government.
  - English.
  - (Elective.)
- Fourth year:
  - American history and government.
  - English.
  - (Elective.)
  - (Elective.)

III. History-English course.

- First year:
  - Latin or German.
  - Ancient history.
  - English.
  - Algebra.
- Second year:
  - Latin or German.
  - Medieval history.
  - English.
  - Geometry.
- Third year:
  - Modern history.
  - English.
  - Physics.
  - Drawing
- Fourth year:
  - American history and government
  - English.
  - (Elective.)
  - (Elective.)

IV. Scientific course.

First year:
- German.
- Botany.
- English.
- Algebra.

Second year:
- German.
- Zoology.
- English.
- Geometry.

Third year:
- Physics.
- Drawing.
- Trigonometry.
- (Elective.)

Fourth year:
- Chemistry.
- Drawing.
- American history and government.
- (Elective.)

V. Business course.

First year:
- (Any other course.)

Second year:
- (Any other course.)

Third year:
- Spanish.
- Business arithmetic.
- Bookkeeping.
- Typewriting.

Fourth year:
- Spanish.
- Business practice.
- (Commercial geography.)
- (Commercial law.)
- (Shorthand.)

HIGH-SCHOOL CURRICULUM OF A LARGE CITY WHERE FIXED COURSES HAVE BEEN ABANDONED.

The school offers a wide range of subjects, requires certain fixed units by groups, and makes up a different course of study for each high-school pupil. The following studies are offered, the numbers in parentheses following each indicating the number of years of each subject offered by the school.

Group I—Languages:
- Latin (4).
- Greek (3).
- German (4).
- French (2).
- Spanish (2).

Group II—English:
- English composition (2).
- English literature (4).
- History, English and American literature (1).

Group III—History:
- Ancient history (1).
- Medieval history (1).
- Modern English history (1).
- General world history (1).
- American history and government (1).

Group IV—Mathematics:
- Algebra (1, 1½).
- Geometry (1, 1½).
- Trigonometry (½).
- Surveying (½).
- Business arithmetic (½).

Group V—Science:
- Botany (1).
- Zoology (1).
- Biology (1).
- Physical geography (1).
- Physics (1).
- Chemistry (1).
- Geology (½).
- Astronomy (½).

Group VI—Miscellaneous:
- Music (2).
- Freehand drawing (2).
- Vocal expression (2).
- Physical training (4).

Group VII—Vocational:
- Mechanical and geometrical drawing (2).
- Manual training (3).
- Domestic science (2).
- Household management (1).
- Bookkeeping (1).
- Business practice (1).
- Shorthand (1).
- Typewriting (1).

Rules governing combinations and graduation.—(1) Students, to graduate, must complete 15 years' work, viz, four studies each year for three years, and three studies one year. (2) Students may, on permission, take as many as five studies or as few as three studies each half-year. (3) Students, to graduate, must have had two years' work in Groups I and II, one year's work in each of the other groups, and four years' work in some one group.

SECTION IV.

LIST OF THE PRINCIPAL DEPARTMENTS OR SCHOOLS OF THE INSTITUTIONS DESCRIBED IN SECTION VI DEVOTED TO VARIOUS BRANCHES OF LIBERAL, SCIENTIFIC, AND PROFESSIONAL STUDY.

The three sections of the bulletin immediately following set forth in as great detail as space will permit the offerings of certain American colleges, universities, and technological schools which have already attracted foreign students in some numbers and which have good standing among the educational institutions of the country. In Section IV the list of these institutions is first given. This is followed by lists showing which of the institutions offer courses leading to degrees, diplomas, or certificates in undergraduate departments of liberal arts, in graduate schools or departments, and in professional or technological schools. Section V is a key to the abbreviations commonly used to designate the degrees granted by all of the institutions mentioned in the bulletin. Section VI contains brief accounts of the organization and offerings of the institutions selected for special treatment.

List of Institutions Named in Section VI.

Alabama:
1. Alabama Polytechnic Institute.

Arizona:
2. University of Arizona.

California:
3. Leland Stanford Junior University.
4. University of California.
5. University of Southern California.

Colorado:
6. Colorado School of Mines.

Connecticut:
7. Yale University.

District of Columbia:
8. Catholic University of America.
9. Georgetown University.
10. George Washington University.
11. Howard University.

Hawaii:
12. College of Hawaii.

Illinois:
13. Armour Institute of Technology.
14. University of Chicago.
15. University of Illinois.
16. Northwestern University.

Indiana:
17. Indiana University.
18. University of Notre Dame.
19. Purdue University.

Iowa:
20. Iowa State College.
21. State University of Iowa.

Kansas:
22. Kansas State Agricultural College.
23. University of Kansas.

Louisiana:
24. Louisiana State University.
25. Tulane University of Louisiana.

Maryland:
26. Goucher College.
27. Johns Hopkins University.

Massachusetts:
28. Amherst College.
29. Clark University.
30. Harvard University.
31. Massachusetts Agricultural College.
32. Massachusetts Institute of Technology.
33. Mount Holyoke College.
34. Simmons College.

Massachusetts—Continued.
  35. Smith College.
  36. Tufts College.
  37. Worcester Polytechnic Institute.
Michigan:
  38. Michigan College of Mines.
  39. University of Michigan.
Minnesota:
  40. University of Minnesota.
Missouri:
  41. St. Louis University.
  42. University of Missouri.
  43. Washington University.
Nebraska:
  44. University of Nebraska.
New Hampshire:
  45. Dartmouth College.
New Jersey:
  46. Princeton University.
  47. Stevens Institute of Technology.
New York:
  48. Columbia University.
  49. Cornell University.
  50. New York University.
  51. Rensselaer Polytechnic Institute.
North Carolina:
  52. University of North Carolina.
Ohio:
  53. Case School of Applied Science.
  54. Oberlin College.
Ohio—Continued.
  55. Ohio State University.
  56. University of Cincinnati.
  57. Western Reserve University.
Oregon:
  58. Oregon State Agricultural College.
  59. University of Oregon.
Pennsylvania:
  60. Bryn Mawr College.
  61. Lehigh University.
  62. Pennsylvania State College.
  63. University of Pennsylvania.
  64. University of Pittsburgh.
South Carolina:
  65. Clemson Agricultural College.
Tennessee:
  66. George Peabody College for Teachers.
  67. Vanderbilt University.
Texas:
  68. University of Texas.
  69. Agricultural and Mechanical College of Texas.
Virginia:
  70. Randolph - Macon Woman's College.
  71. University of Virginia.
Washington:
  72. University of Washington.
  73. State College of Washington.
Wisconsin:
  74. University of Wisconsin.

UNDERGRADUATE DEPARTMENTS (OR COLLEGES OR SCHOOLS OR DIVISIONS) OF ARTS AND SCIENCES.

Degrees: A. B. or B. A., B. S. or B. Sc. or S. B., Ph. B., L. H. B., B. L., Lit. B. or Litt B., B. S. in General Science, B. S. in Pure Science; certificates.

1. Alabama Polytechnic Institute (Undergraduate Department)—B. S. (4 years).
2. Amherst College (Undergraduate Department)—B. A. (4 years).
3. Bryn Mawr College (Undergraduate Department)—A. B. (4 years).
4. Catholic University of America (School of Philosophy—Undergraduate Department)—A. B. (4 years), Ph. B. (4 years).
   (School of Letters—Undergraduate Department)—A. B. (4 years L. H. B. (4 years).
   (School of Sciences—Undergraduate Department)—B. S. (4 years A. B. (4 years).
5. Clark College—A. B. (3 years).
6. Clemson Agricultural College—B. S. (4 years).
7. College of Hawaii (Undergraduate Department)—B. S. (4 years).

8. Columbia University (Columbia College)—A. B. (4 years).
   (Barnard College)—A. B. (4 years).
9. Cornell University (College of Arts and Sciences)—A. B. (4 years).
10. Dartmouth College (Undergraduate Department of Arts and Sciences)—A. B. (4 years), B. S. (4 years).
11. George Washington University (Columbian College)—A. B. (4 years).
12. Georgetown University (The College—Undergraduate Department)—A. B. (4 years), B. S. (4 years).
13. Goucher College (Undergraduate Department)—A. B. (4 years).
14. Harvard University (Harvard College)—A. B. (4 years), S. B. (4 years).
   (Radcliffe College—Undergraduate Department)—A. B. (4 years).
15. Howard University (School of Liberal Arts)—A. B. (4 years), B. S. (4 years).
16. Indiana University (College of Liberal Arts)—A. B. (4 years), B. S. (4 years, combined arts and medicine).
17. Johns Hopkins University (Faculty of Philosophy)—A. B. (4 years).
18. Kansas State Agricultural College (Division of General Science)—B. S. (4 years).
19. Lehigh University (Undergraduate Department)—B. A. (4 years).
20. Leland Stanford Junior University (Undergraduate Department)—A. B. (4 years).
21. Louisiana State University (Department of Arts and Sciences)—B. A. (4 years).
22. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (General Science) (4 years).
23. Mount Holyoke College (Undergraduate Department)—A. B. (4 years).
24. Municipal University of Akron (Buchtel College of Liberal Arts)—A. B. (4 years), B. S. (4 years).
25. New York University (College of Arts and Pure Science)—A. B. (4 years), B. S. in Pure Science (4 years).
   (Washington Square College) (evening courses)—A. B. (8 years), B. S. (8 years).
26. Northwestern University (College of Liberal Arts)—B. A. (4 years), B. S. (4 years).
27. Oberlin College (College of Arts and Sciences)—A. B. (4 years).
28. Ohio State University (College of Arts, Sciences, and Philosophy)—A. B. (4 years).
29. Pennsylvania State College (School of Liberal Arts)—A. B. (4 years).
   (School of Natural Sciences)—B. S. (4 years).
30. Princeton University (Undergraduate Department)—A. B. (4 years), Lit. B. (4 years), B. S. (4 years).
31. Purdue University (Undergraduate Department)—B. S. (4 years).
32. Randolph-Macon Woman's College (Undergraduate Department)—A. B. (4 years).
33. Rensselaer Polytechnic Institute (Undergraduate Department)—B. S. (4 years).
4. St. Louis University (College of Arts and Sciences)—A. B. (4 years), B. S. (4 years).
   (School of Philosophy and Science.)
5. Simmons College (Undergraduate Department)—B. S. (4 years), certificate (short course).
6. Smith College (Undergraduate Department)—A. B. (4 years).
7. State College of Washington (College of Sciences and Arts)—B. A. (4 years), B. S. (4 years).

38. State University of Iowa (College of Liberal Arts)—B. A. (4 years), B. S. (6 years combined course).
39. Tufts College (School of Liberal Arts)—A. B. (4 years), B. S. (4 years).
    (Jackson College)—A. B. (4 years), B. S. (4 years).
40. Tulane University of Louisiana (College of Arts and Sciences)—B. A. (4 years), B. S. (4 years).
    (H. Sophie Newcomb Memorial College)—B. A. (4 years).
41. University of Arizona (Undergraduate Department)—A. B. (4 years), B. S. (4 years).
42. University of California (College of Letters and Science)—A. B. (4 years).
43. University of Chicago (The Colleges)—A. B. (4 years), B. S. (4 years), Ph. B. (4 years).
44. University of Cincinnati (McMicken College of Liberal Arts)—A. B. (4 years).
45. University of Illinois (College of Liberal Arts and Sciences)—A. B. (4 years), B. S. (4 years).
46. University of Kansas (College of Liberal Arts and Sciences)—A. B. (4 years), B. S. (4 years).
47. University of Michigan (College of Literature, Science, and the Arts)—A. B. (4 years), B. S. (4 years).
48. University of Minnesota (College of Science, Literature, and the Arts)—A. B. (4 years), B. S. (combined Arts and Med.) (4 years).
49. University of Missouri (College of Arts and Science)—A. B. (4 years).
    (School of Mines and Metallurgy)—B. S. in General Science (4 years).
50. University of Nebraska (College of Liberal Arts)—A. B. (4 years), B. Sc. (4 years).
51. University of North Carolina (College of Liberal Arts)—A. B. (4 years).
52. University of Notre Dame (College of Arts and Letters)—A. B. (4 years), Lit. B. (4 years); Ph. B. (4 years).
    (College of Science)—B. S. (4 years).
53. University of Oregon (College of Literature, Sciences, and the Arts)—A. B. (4 years), B. S. (4 years).
54. University of Pennsylvania (Undergraduate Department of Arts and Sciences)—A. B. (4 years).
55. University of Pittsburgh (The College)—A. B. (4 years), B. S. (4 years).
56. University of Southern California (College of Liberal Arts—Undergraduate Department)—A. B. (4 years).
57. University of Texas (College of Arts)—B. A. (4 years).
58. University of Virginia (The College)—A. B. (4 years), B. S. (4 years).
59. University of Washington (College of Liberal Arts)—A. B. (4 years).
    (College of Science)—B. S. (4 years).
    (College of Mines)—B. S. (4 years).
60. University of Wisconsin (College of Letters and Sciences)—A. B. (4 years), Ph. B. (4 years), Ph. B. (2-year course for normal school graduates).
61. Vanderbilt University (The College)—A. B. (4 years), B. S. (4 years).
62. Washington University (St. Louis) The College—A. B. (4 years), B. S. (years, combined arts and medicine).
63. Western Reserve University (Adelbert College)—A. B. (4 years).
    (College for Women)—A. B. (4 years), B. S. (4 years).
    (Adelbert College and Case School of Applied Science)—A. B. and B. S (5 years).
64. Worcester Polytechnic Institute (Undergraduate Department)—B. S. (years).
65. Yale University (Yale College)—B. A. (4 years), Ph. B. (4 years).
    (Sheffield Scientific School)—B. S. (4 years).

GRADUATE SCHOOLS (OR DEPARTMENTS OR COLLEGES) OF ARTS AND SCIENCES.

Degrees granted M. S. or S. M., A. M. or M. A., Ph. M., Ph. D., L. H. M., L. H. D., Sc. D. or D. Sc., or S. D., M. L., etc.

1. Amherst College (Graduate Department)—M. A. (1 year).
2. Armour Institute of Technology (Graduate Department)—M. S. (1 year).
3. Bryn Mawr College (Graduate Department)—A. M. (1 to 3 years), Ph. D. (3 years).
4. Case School of Applied Science (Graduate Department)—M. S. (1 year).
5. Catholic University of America (School of Philosophy)—Graduate department—Ph. M. (2 years), Ph. D. (3 years).
    - School of Letters (Graduate Department)—A. M. (1 year), L. H. M. (2 years), Ph. D. (3 years), L. H. D. (3 years).
    - School of Sciences (Graduate Department)—A. M. (1 year), M. S. (2 years), Sc. D. (3 years), Ph. D. (3 years).
6. Clark University—A. M. (1 year), Ph. D. (1 to 3 years).
7. College of Hawaii (Graduate Department)—M. S. (1 year).
8. Columbia University (Graduate Department)—A. M. (1 year), Ph. D. (2 years or more).
9. Cornell University (Graduate School)—A. M. (1 year), M. S. (1 year), Ph. D. (3 years).
10. Dartmouth College (Graduate Department)—A. M. (1 year), M. S. (1 year).
11. George Washington University (School of Graduate Studies)—A. M. (1 year), S. M. (1 year), Ph. D. (3 years).
12. Georgetown University (Graduate School)—A. M. (1 year), Ph. D. (3 years).
13. Harvard University (Graduate School of Arts and Sciences)—A. M. (1 year), Ph. D. (2 years or more).
    - Radcliffe College (Graduate Department)—A. M. (1 year), Ph. D. (2 years).
14. Iowa State College (Graduate Department)—M. S. (1 year), Ph. D. (3 years).
15. Johns Hopkins University (Graduate Department)—A. M. (2 years), Ph. D. (3 years).
16. Kansas State Agricultural College (Graduate Department—M. S. (1 year), M. S. (in specific subjects) (1 year).
17. Lehigh University (Graduate Department)—M. A. (1 year), M. S. (1 year).
18. Leland Stanford Junior University (Graduate Department)—A. M. (1 year), Ph. D. (3 years).
19. Louisiana State University (Graduate School)—M. A. (1 or 2 years), M. S. (1 or 2 years).
20. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year), Ph. D. (3 years).

1. Mount Holyoke College (Graduate Department)—A. M. (1 year).

2. New York University (Graduate School)—M. A. (1 year), M. S. (1 year), Ph. D. (3 years), Sc. D. (3 years).

3. Northwestern University (Graduate School)—M. A. (1 year), Ph. D. (3 years).

4. Oberlin College (Graduate Department)—A. M. (1 year).

5. Ohio State University (Graduate School)—A. M. (1 year), M. S. (1 year), Ph. D. (3 years).

26. Pennsylvania State College (Graduate Department)—A. M., M. S. (time not designated).
27. Princeton University (Graduate School)—A. M. (1 year), Ph. D. (2 or 3 years).
28. Purdue University (Graduate Department)—M. S. (1 year).
29. Randolph-Macon Woman's College (Graduate Department)—A. M. (1 year).
30. Rensselaer Polytechnic Institute (Graduate Department)—M. S. (1 year), Ph. D. (3 years), Sc. D. (3 years).
31. Simmons College (Graduate Department)—M. S. (1 year).
32. Smith College (Graduate Department)—A. M. (1 year), Ph. D. (3 years).
33. State College of Washington (Graduate Department)—M. A. (1 year), M. S. (1 year).
34. State University of Iowa (Graduate College)—M. S. (1 year), M. A. (1 year), Ph. D. (3 years).
35. Tufts College (Graduate School)—M. A. (1 year), M. S. (1 year).
36. Tulane University of Louisiana (Department of Graduate Studies)—M. A. (1 year), M. S. (1 year), Ph. D. (3 years).
37. University of Arizona (Graduate School)—A. M. (1 year), M. S. (1 year).
38. University of California (Graduate School)—M. A. (1 year), M. S. (1 year), Ph. D. (2 years).
39. University of Chicago (Graduate School of Arts and Literature, and Ogden School of Science)—A. M. (1 year), M. S. (1 year), Ph. D. (3 years).
40. University of Cincinnati (Graduate School)—A. M. (1 year), Ph. D. (3 years).
41. University of Illinois (Graduate School)—M. A. (1 year), M. S. (1 year), Ph. D. (3 years).
42. University of Kansas (Graduate School)—A. M. (1 year), M. S. (1 year), Ph. D. (3 years).
43. University of Michigan (Graduate School)—A. M. (1 year), M. S. (1 year), Ph. D. (3 years), Sc. D. (3 years).
44. University of Minnesota (Graduate School)—M. A. (1 year), M. S. (1 year), Ph. D. (3 years).
45. University of Missouri (Graduate School)—A. M. (1 year), Ph. D. (3 years).
46. University of Nebraska (Graduate College)—A. M. (1 year), Ph. D. (3 years).
47. University of North Carolina (Graduate School)—A. M. (1 year), S. M. (1 year), Ph. D. (3 years).
48. University of Notre Dame (Graduate School)—M. A. (1 year), M. S. (1 year), Ph. D. (3 years).
49. University of Oregon (Graduate School)—M. A. (1 year), M. S. (1 year).
50. University of Pennsylvania (Graduate School)—A. M. (1 year), M. S. (1 year), Ph. D. (3 years).
51. University of Pittsburgh (Graduate School)—M. A. (1 year), M. S. (1 year), Ph. D. (3 years).
52. University of Southern California (College of Liberal Arts—Graduate I partment)—A. M. (1 year).
53. University of Texas (Graduate School)—A. M. (1 year), Ph. D. (3 year
54. University of Virginia (Department of Graduate Studies)—M. A. (1 yea M. S. (1 year), Ph. D. (3 years).
55. University of Washington (Graduate School)—M. A. (1 year), M. S. year), Ph. D. (3 years).
56. University of Wisconsin (Graduate School)—M. A. (1 year), M. S. (1 yea , Ph. M. (1 year), Ph. D. (3 years).

57. Vanderbilt University (Graduate Department)—M. A. (1 year), M. S. (1 year), Ph. D. (3 years), D. Sc. (3 years).
58. Washington University (St. Louis) (Graduate School)—A. M. (1 year), Ph. D. (3 years).
59. Western Reserve University (Graduate School)—A. M. (1 year).
60. Worcester Polytechnic Institute (Graduate Department)—M. S. (1 year), Sc. D. (3 years).
61. Yale University:
    (Graduate School)—M. A. (2 years), Ph. D. (3 years).
    (Sheffield Scientific School)—M. S. (2 years).

ENGINEERING COURSES.

GENERAL ENGINEERING COLLEGES (OR DEPARTMENTS OR SCHOOLS OR DIVISIONS).

(Includes also courses in two or more engineering subjects.)

UNDERGRADUATE COURSES.

Degrees: B. S., B. S. in E. M. and Met., B. S. in Engineering (or B. S. in Eng.), B. E., B. Eng., B. S. in Structural Engineering, B. S. in M. E. and E. E., B. S. in Civil and Highway Engineering.

1. Agricultural and Mechanical College of Texas (Undergraduate Department)—B. S. (4 years).
2. Iowa State College (Division of Engineering)—B. S., and B. S. in specific subjects (4 years).
3. Johns Hopkins University (Department of Engineering)—B. E. (4 years).
4. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 years).
5. Northwestern University (College of Engineering)—B. S. (4 years).
6. Ohio State University (College of Engineering)—B. E. (4 years).
7. Pennsylvania State College (School of Engineering)—B. S. (4 years).
8. State University of Iowa (College of Applied Science)—B. Eng. (4 years), B. S. (4 years).
9. Tufts College (Engineering School)—B. S. in Structural Engineering (4 years).
10. University of Arizona (Undergraduate Department)—B. S. in E. M. and Met. (4 years).
11. University of California (College of Mechanics)—B. S. (Mechanical and Electrical Engineering) (4 years).
    (College of Civil Engineering)—B. S. (Railway Engineering, Sanitary Engineering, Irrigation Engineering (4 and 5 years).
12. University of Kansas (School of Engineering)—B. S. in Eng. (4 years), B. S. (5 years).
13. University of Michigan (College of Engineering and Architecture)—B. S. in Eng. (4 years).
14. University of Minnesota (College of Engineering and Architecture)—B. S. in Eng. (4 years).
15. University of Missouri (School of Engineering)—B. S. in Eng. (4 years).
16. University of North Carolina (School of Applied Science)—B. S. in Civil and Highway Engineering (4 years).

GRADUATE COURSES.

Degrees: M. S., M. S. in Eng., M. S. (with mention of specific subject), Ph. D., D. Eng. (or Eng. D.), Sc. D.

1. Johns Hopkins University (Department of Engineering)—Ph. D. (3 years).
2. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year), Ph. D. (3 years), D. Eng. (3 years).
3. Ohio State University (Graduate School)—M. S. in Eng. (1 year).
4. Rensselaer Polytechnic Institute (Graduate Department)—Eng. D. (3 years), Sc. D. (3 years), Ph. D. (3 years).
5. University of Illinois (Graduate School)—M. S. (with mention of specific subject) (1 year).
6. University of Kansas (Graduate School)—M. S. (1 year).
7. University of Michigan (Graduate School)—M. S. in Eng. (1 year).
8. University of Nebraska (College of Engineering)—Ph. D. (3 years).

Chemical Engineering Colleges (or Schools or Departments).

UNDERGRADUATE COURSES.

Degrees: B. S. (or S. B.) in Chem. (or Ch.) E., Chem. (or Ch.) E., B. Chem. (or Ch.) E., B. S., B. E., B. S. in Eng.

1. Agricultural and Mechanical College of Texas (Undergraduate Department)—B. S. in Ch. E. (4 years).
2. Alabama Polytechnic Institute (College of Engineering, Mines and Architecture)—B. S. (4 years).
3. Armour Institute of Technology (Undergraduate Department)—B. S. in Ch. E. (4 years).
4. Case School of Applied Science (Undergraduate Department)—B. S. (4 years).
5. Catholic University of America (School of Sciences)—B. S. in Chem. E. (4 years).
6. Clemson Agricultural College—B. S. (4 years).
7. George Washington University (College of Engineering)—B. S. in Chem. E. (4 years).
8. Harvard University (School of Engineering)—S. B. (4 years).
9. Iowa State College (Division of Engineering)—B. S. in Chem. E. (4 or 5 years).
10. Johns Hopkins University (Department of Engineering)—B. S. in Chem. (4 years).
11. Lehigh University (Undergraduate Department)—Ch. E. (4 years).
12. Louisiana State University (College of Engineering)—B. S. (4 years).
13. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
14. New York University (School of Applied Science)—B. S. in Chem. E. (4 years).
15. Ohio State University (College of Engineering)—B. Ch. E. (4 years).
16. Oregon State Agricultural College (School of Engineering)—B. S. in Ch. (4 years).
17. Pennsylvania State College (School of Engineering)—B. S. (4 years).
18. Purdue University (Undergraduate Department)—B. S. in Chem. E. years).
19. Rensselaer Polytechnic Institute (Undergraduate Department)—Ch. E. years).

20. State College of Washington (College of Mechanic Arts and Engineering)—B. S. in Ch. E. (4 years).
21. State University of Iowa (College of Applied Science)—B. S. in Chem. (5 years).
22. Tufts College (Engineering School)—B. S. in Chem. E. (4 years).
23. Tulane University of Louisiana (College of Technology)—B. E. (4 years).
24. University of California (College of Chemistry)—B. S. (4 years).
25. University of Cincinnati (College of Engineering)—B. S. in Chem. E. (4 years); Ch. E. (5-year cooperative course).
26. University of Kansas (School of Engineering)—B. S. in Eng. (4 years), B. S. (5 years).
27. University of Michigan (College of Engineering)—B. S. in Eng. (4 years).
28. University of Minnesota (School of Analytical and Applied Chemistry)—Chem. E. (5 years).
29. University of Missouri (School of Engineering)—Ch. E. (5 years); (School of Mines and Metallurgy)—B. S. in Ch. E. (4 years).
30. University of Notre Dame (College of Engineering)—Chem. E. (4 years).
31. University of Pennsylvania (Towne Scientific School)—B. S. in Chem. E. (4 years).
32. University of Pittsburgh (School of Engineering)—B. S. in Chem. E. (4 years).
33. University of Southern California (College of Liberal Arts—Undergraduate Department—2 years' course).
34. University of Texas (College of Engineering)—B. S. in Ch. E. (4 years).
35. University of Virginia (Department of Engineering)—Ch. E. (4 years).
36. University of Washington (College of Engineering)—B. S. in Ch. E. (4 years).
37. University of Wisconsin (College of Engineering)—B. S. in Chem. E. (4 years).
38. Vanderbilt University (Engineering Department)—B. E. (4 years).
39. Washington University (St. Louis) (School of Engineering)—B. S. in Chem. E. (4 years).
40. Worcester Polytechnic Institute (Undergraduate Department)—B. S. (4 years).
41. Yale University (Sheffield Scientific School)—B. S. (4 years).

GRADUATE COURSES.

Degrees: M. S. (or S. M.), M. S. (or S. M.) in Ch. E., S. M. in Industrial Chem., M. Ch. E., M. S. in Eng., Ch. E. (or Chem. E.).

1. Agricultural and Mechanical College of Texas (Graduate Department)—Ch. E. (1 year).
2. Alabama Polytechnic Institute (Graduate Department)—Ch. E. (1 year).
3. Armour Institute of Technology (Graduate Department)—Ch. E. (3 years).
4. Case School of Applied Science (Graduate Department)—Chem. E. (3 years).
5. Columbia University (School of Chemistry)—Chem. E. (3 years).
6. Harvard University (School of Engineering)—S. M. in Industrial Chem. (1 year).
7. Iowa State College (Graduate Division)—Ch. E. (2 or 5 years).
8. Leland Stanford Junior University (Graduate Department)—Ch. E. (1 year).

9. Louisiana State University (Graduate Department)—Ch. E. (1 or 2 years).
10. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).
11. New York University (School of Applied Science)—Chem. E. (1 year).
12. Ohio State University (Graduate School)—M. S. in Eng. (1 year); Ch. E. (2 to 4 years).
13. Oregon State Agricultural College (School of Engineering)—Ch. E. (1 year).
14. Purdue University (Graduate Department)—Ch. E. (1 year).
15. Rensselaer Polytechnic Institute (Graduate Department)—M. Ch. E. (1 year).
16. State College of Washington (College of Mechanic Arts and Engineering)—Ch. E. (1 or 3 years).
17. State University of Iowa (College of Applied Science)—Ch. E. (4 years).
18. Tulane University of Louisiana (Faculty of Graduate Studies)—Chem. E. (1 or 2 years).
19. University of Kansas (Graduate School)—Chem. E. (3 years).
20. University of Michigan (Graduate School)—M. S. in Eng. (1 year); Ch. E. (1 year—registration for the degree not less than 5 years after award of bachelor's degree).
21. University of Pittsburgh (School of Engineering)—Chem. E. (3 years).
22. University of Washington (College of Engineering)—M. S. in Ch. E. (1 year).
23. University of Wisconsin (Graduate School)—Ch. E. (1 to 3 years).
24. Washington University (St. Louis) (School of Engineering)—Chem. E. (3 years).
25. Worcester Polytechnic Institute (Graduate Department)—Ch. E. (1 to 3 years).
26. Yale University (Graduate School)—Chem. E. (1 year); M. S. (2 years).

CIVIL ENGINEERING DEPARTMENTS (OR SCHOOLS OR COLLEGES OR DIVISIONS).

UNDERGRADUATE COURSES.

Degrees: B. S. (or S. B. or B. Sc.) in C. E., B. S. in Eng., B. C. E., B. E., C. E.

1. Agricultural and Mechanical College of Texas (School of Engineering)—B. S. in C. E. (4 years).
2. Alabama Polytechnic Institute (College of Engineering, Mines, and Architecture)—B. S. (4 years).
3. Armour Institute of Technology (Undergraduate Department)—B. S. in C. E. (4 years).
4. Case School of Applied Science (Undergraduate Department)—B. S. in C. E. (4 years).
5. Catholic University of America (School of Sciences)—B. S. in C. E. (4 years).
6. Clemson Agricultural College—B. S. in C. E. (4 years).
7. College of Hawaii (Undergraduate Department)—B. S. in C. E. (4 years)
8. Cornell University (College of Civil Engineering)—C. E. (4 or 5 years).
9. George Washington University (College of Engineering)—B. S. in C. E. (years).
10. Harvard University (School of Engineering)—S. B. in C. E. (4 years).
11. Howard University (School of Applied Science)—B. S. in C. E. (4 years)
12. Iowa State College (Division of Engineering)—B. S. in C. E. (4 or 5 years)
13. Johns Hopkins University (Department of Engineering)—B. E. (4 years)

14. Kansas State Agricultural College (Division of Engineering)—B. S. in C. E. (4 years).
15. Lehigh University (Undergraduate Department)—C. E. (4 years).
16. Louisiana State University (Undergraduate Department)—B. S. (4 years).
17. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
18. Municipal University of Akron (College of Engineering)—C. E. (5-year cooperative course).
19. New York University (School of Applied Science)—B. S. in C. E. (4 years).
20. Northwestern University (College of Engineering)—B. S. (4 years).
21. Ohio State University (College of Engineering)—B. C. E. (4 years).
22. Oregon State Agricultural College (School of Engineering)—B. S. in C. E. (4 years).
23. Pennsylvania State College (School of Engineering)—B. S. (4 years).
24. Princeton University (Undergraduate Department)—C. E. (4 years).
25. Purdue University (Undergraduate Department)—B. S. in C. E. (4 years).
26. Rensselaer Polytechnic Institute (Undergraduate Department)—C. E. (4 years).
27. State College of Washington (College of Mechanic Arts and Engineering)—B. S. in C. E. (4 years).
28. State University of Iowa (College of Applied Science)—B. Eng. (4 years).
29. Tufts College (Engineering School)—B. S. in C. E. (4 years).
30. Tulane University of Louisiana (College of Technology)—B. C. E. (4 years).
31. University of Arizona (Undergraduate Department)—B. S. in C. E. (4 years).
32. University of California (College of Civil Engineering)—B. S. (4 years).
33. University of Cincinnati (College of Engineering)—B. S. in C. E. (4 years); C. E. (5-year cooperative course).
34. University of Illinois (College of Engineering)—B. S. in C. E. (4 years).
35. University of Kansas (School of Engineering)—B. S. in Eng. (4 years); B. S. (5 years).
36. University of Michigan (College of Engineering)—B. S. in Eng. (4 years).
37. University of Minnesota (College of Engineering and Architecture)—B. S. in Eng. (4 years).
38. University of Missouri (School of Engineering)—C. E. (5 years). School of Mines and Metallurgy—B. S. in C. E. (4 years).
39. University of Nebraska (College of Engineering)—B. Sc. in C. E. (4 years).
40. University of North Carolina (School of Applied Science)—B. S. in Civil and Highway Engineering (4 years).
41. University of Notre Dame (College of Engineering)—C. E. (4 years).
42. University of Pennsylvania (Towne Scientific School)—B. S. in C. E. (4 years).
43. University of Pittsburgh (School of Engineering)—B. S. in C. E. (4 years).
44. University of Texas (College of Engineering)—B. S. in C. E. (4 years).
45. University of Virginia (Department of Engineering)—C. E. (4 years).
46. University of Washington (College of Engineering)—B. S. in C. E. (4 years).
47. University of Wisconsin (College of Engineering)—B. S. in C. E. (4 years).
48. Vanderbilt University (Engineering Department)—B. E. (4 years).
49. Washington University (St. Louis) (School of Engineering)—B. S. in C. E. (4 years).
50. Worcester Polytechnic Institute (Undergraduate Department)—B. S. (4 years).
51. Yale University (Sheffield Scientific School)—B. S. (4 years).

GRADUATE COURSES.

Degrees: M. S. (or S. M.) in C. E., M. S. in Eng., C. E., M. C. E.

1. Agricultural and Mechanical College of Texas (School of Engineering)—C. E. (1 year).
2. Alabama Polytechnic Institute (Graduate Department)—C. E. (1 year).
3. Armour Institute of Technology (Graduate Department)—C. E. (3 years).
4. Case School of Applied Science (Graduate Department)—C. E. (3 years).
5. Catholic University of America (School of Sciences)—C. E. (2 years).
6. College of Hawaii (Graduate Department)—C. E. (1 year).
7. Columbia University (School of Engineering)—C. E. (3 years).
8. Cornell University (Graduate School)—M. C. E. (1 year).
9. Dartmouth College (Thayer School of Civil Engineering)—C. E. (2 years).
10. George Washington University (School of Graduate Studies)—C. E. (1 year).
11. Harvard University (School of Engineering)—S. M. in C. E. (1 year).
12. Iowa State College (Graduate Division)—C. E. (2 or 5 years).
13. Johns Hopkins University (Department of Engineering)—M. C. E. (2 years).
14. Leland Stanford Junior University (Graduate Department)—C. E. (1 year).
15. Louisiana State University (Graduate Department)—C. E. (1 or 2 years).
16. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year or more).
17. New York University (School of Applied Science)—C. E. (1 year).
18. Northwestern University (College of Engineering)—C. E. (1 year).
19. Ohio State University (Graduate School)—M. S. in Eng. (1 year); C. E. (2 to 4 years).
20. Oregon State Agricultural College (School of Engineering)—C. E. (1 year).
21. Pennsylvania State College (Graduate Department)—C. E. (time not designated).
22. Purdue University (Graduate Department)—C. E. (1 year).
23. Rensselaer Polytechnic Institute (Graduate Department)—M. C. E. (1 year).
24. State College of Washington (College of Mechanic Arts and Engineering)—C. E. (1 or 3 years).
25. State University of Iowa (College of Applied Science)—C. E. (4 years).
26. Tulane University of Louisiana (Faculty of Graduate Studies)—C. E. (1 or 2 years).
27. University of California (Graduate School)—C. E. (3 years).
28. University of Illinois (Graduate School)—C. E. (3 years).
29. University of Kansas (Graduate School)—C. E. (3 years).
30. University of Michigan (Graduate School)—M. S. in Eng. (1 year); C. E. (1 year—registration for the degree 5 years after bachelor's degree).
31. University of Minnesota (College of Engineering and Architecture)—C. E. (1 year).
32. University of Nebraska (Graduate College)—M. S. in C. E. (1 year); C. E. (1 year—registration for degree 5 years after bachelor's degree).
33. University of Pittsburgh (School of Engineering)—C. E. (3 years).
34. University of Texas (College of Engineering)—C. E. (1 year).
35. University of Washington (College of Engineering)—M. S. in C. E. (year); C. E. (1 or 2 years).
36. University of Wisconsin (Graduate School)—C. E. (1 to 3 years).
37. Vanderbilt University (Engineering Department)—C. E. (1 year).
38. Washington University (St. Louis) (School of Engineering)—C. E. (years).

39. Worcester Polytechnic Institute (Graduate Department)—C. E. (1 or 3 years).
40. Yale University (Graduate School)—C. E. (1 year); M. S. (2 years).

ELECTRICAL ENGINEERING DEPARTMENTS (OR SCHOOLS OR DIVISIONS OR COLLEGES).

UNDERGRADUATE COURSES.

Degrees: B. S. (or S. B. or B. Sc.) in E. E., B. S. (or S. B.), B. E. E., B. E., B. S. in Hydro-Electrical Engineering.

1. Agricultural and Mechanical College of Texas (School of Engineering)—B. S. in E. E. (4 years).
2. Alabama Polytechnic Institute (College of Engineering, Mines, and Architecture)—B. S. (4 years).
3. Armour Institute of Technology (Undergraduate Department)—B. S. in E. E. (4 years).
4. Case School of Applied Science (Undergraduate Department)—B. S. (4 years).
5. Catholic University of America (School of Sciences)—B. S. in E. E. (4 years).
6. Clemson Agricultural College—B. S. in E. E. (4 years).
7. George Washington University (College of Engineering)—B. S. in E. E. (4 years).
8. Harvard University (School of Engineering)—S. B. in E. E. (4 years).
9. Howard University (School of Applied Science)—B. S. in E. E. (4 years).
10. Iowa State College (Division of Engineering)—B. S. in E. E. (4 or 5 years).
11. Johns Hopkins University (Department of Engineering)—B. E. (4 years).
12. Kansas State Agricultural College (Division of Engineering)—B. S. in E. E. (4 years).
13. Lehigh University (Undergraduate Department)—E. E. (4 years).
14. Louisiana State University (College of Engineering)—B. S. (4 years).
15. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
16. Municipal University of Akron (College of Engineering)—E. E. (5-year cooperative course).
17. Northwestern University (College of Engineering)—B. S. (4 years).
18. Ohio State University (College of Engineering)—B. E. E. (4 years).
19. Oregon State Agricultural College (School of Engineering)—B. S. in E. E. (4 years).
20. Pennsylvania State College (School of Engineering)—B. S. (4 years).
21. Purdue University (Undergraduate Department)—B. S. in E. E. (4
22. Rensselaer Polytechnic Institute (Undergraduate Department)- years).
23. State College of Washington (College of Mechanic Arts and En B. S. in E. E. (4 years), B. S. in Hydro-Electrical Engineeri
24. State University of Iowa (College of Applied Science)—B. En
25. Tufts College (Engineering School)—B. S. in E. E. (4 years).
26. Tulane University of Louisiana (College of Technology)—B. E
27. University of Arizona (Undergraduate Department)—B. S. years).
28. University of California (College of Mechanics)—B. S. (4 y
29. University of Cincinnati (College of Engineering)—B. S. in E E. E. (5-year cooperative course).

30. University of Illinois (College of Engineering)—B. S. in E. E. (4 years).
31. University of Kansas (School of Engineering)—B. S. in Eng. (4 years), B. S. (5 years).
32. University of Michigan (College of Engineering)—B. S. in Eng. (4 years).
33. University of Minnesota (College of Engineering and Architecture)—B. S. in Eng. (4 years).
34. University of Missouri (School of Engineering)—E. E. (5 years); (School of Mines and Metallurgy)—B. S. in E. E. (4 years).
35. University of Nebraska (College of Engineering)—B. Sc. in E. E. (4 years).
36. University of North Carolina (School of Applied Science)—B. S. in E. E. (4 years).
37. University of Notre Dame (College of Engineering)—E. E. (4 years).
38. University of Pennsylvania (Towne Scientific School)—B. S. in E. E. (4 years).
39. University of Pittsburgh (School of Engineering)—B. S. in E. E. (4 years).
40. University of Texas (College of Engineering)—B. S. in E. E. (4 years).
41. University of Virginia (Department of Engineering)—E. E. (4 years).
42. University of Washington (College of Engineering)—B. S. in E. E. (4 years).
43. University of Wisconsin (College of Engineering)—B. S. in E. E. (4 years).
44. Vanderbilt University (Engineering Department)—B. E. (4 years).
45. Washington University (St. Louis) (School of Engineering)—B. S. in E. E. (4 years).
46. Worcester Polytechnic Institute (Undergraduate Department)—B. S. (4 years).
47. Yale University (Sheffield Scientific School)—B. S. (4 years).

GRADUATE COURSES.

Degrees: M. S. (or S. M.) in E. E., E. E., M. E. E., M. S. in Eng.

1. Agricultural and Mechanical College of Texas (School of Engineering)—E. E. (1 year).
2. Alabama Polytechnic Institute (Graduate Department)—E. E. (1 year).
3. Armour Institute of Technology (Graduate Department)—E. E. (3 years).
4. Case School of Applied Science (Graduate Department)—E. E. (3 years).
5. Catholic University of America (School of Sciences)—E. E. (2 years).
6. College of Hawaii (Graduate Department)—E. E. (1 year).
7. Columbia University (School of Engineering)—E. E. (3 years).
8. George Washington University (School of Graduate Studies)—E. E. (1 year).
9. Harvard University (School of Engineering)—S. M. in E. E. (1 year).
10. Iowa State College (Graduate Division)—E. E. (2 or 5 years).
11. Johns Hopkins University (Department of Engineering)—M. E. E. (2 years).
12. Leland Stanford Junior University (Graduate Department)—E. E. (1 year).
13. Louisiana State University (Graduate Department)—E. E. (1 or 2 years).
14. Massachusetts Institute of Technology (Graduate Department)—M. S (1 year).
15. Northwestern University (College of Engineering)—E. E. (1 year).
16. Ohio State University (Graduate School)—M. E. in Eng. (1 year); E. E (2 to 4 years).
17. Oregon State Agricultural College (School of Engineering)—E. E. (1 year).
18. Pennsylvania State College (Graduate Department)—E. E. (time not designated).

19. Princeton University (School of Electrical Engineering)—E. E. (2 years).
20. Purdue University (Graduate Department)—E. E. (1 year).
21. Rensselaer Polytechnic Institute (Graduate Department)—M. E. E. (1 year).
22. State College of Washington (College of Mechanic Arts and Engineering)—E. E. (1 or 3 years).
23. State University of Iowa (College of Applied Science)—E. E. (4 years).
24. Tulane University of Louisiana (Faculty of Graduate Studies)—E. E. (1 or 2 years).
25. University of California (Graduate Department)—E. E. (3 years).
26. University of Illinois (Graduate School)—E. E. (3 years).
27. University of Kansas (Graduate School)—E. E. (3 years).
28. University of Michigan (Graduate School)—M. S. in Eng. (1 year); E. E. (1 year—registration for degree not less than 5 years after award of bachelor's degree).
29. University of Minnesota (College of Engineering and Architecture)—E. E. (1 year).
30. University of Nebraska (Graduate College)—M. S. in E. E. (1 year); E. E. (1 year—registration 5 years after award of bachelor's degree).
31. University of Pittsburgh (School of Engineering)—E. E. (3 years).
32. University of Texas (College of Engineering)—E. E. (1 year).
33. University of Washington (College of Engineering)—M. S. in E. E. (1 year); E. E. (1 or 2 years).
34. University of Wisconsin (Graduate School)—E. E. (1 to 3 years).
35. Vanderbilt University (Engineering Department)—E. E. (1 year).
36. Washington University (St. Louis) (School of Engineering)—E. E. (3 years).
37. Worcester Polytechnic Institute (Graduate Department)—E. E. (1 to 3 years).
38. Yale University (Graduate School)—E. E. (1 year); M. S. (2 years).

MECHANICAL ENGINEERING DEPARTMENTS (OR SCHOOLS OR COLLEGES OR DIVISIONS OR INSTITUTES).

UNDERGRADUATE COURSES.

Degrees: B. S. (or S. B. or B. Sc.) in M. E., B. S., B. S. in Eng., M. E. (or Mech. E.), B. M. E., B. E., B. Eng.

1. Agricultural and Mechanical College of Texas (Undergraduate Department)—B. S. in M. E. (4 years).
2. Alabama Polytechnic Institute (College of Engineering, Mines, and Architecture)—B. S. (4 years).
3. Armour Institute of Technology (Undergraduate Department)—B. S. in M. E. (4 years).
4. Case School of Applied Science (Undergraduate Department)—B. S. in M. E. (4 years).
5. Catholic University of America (School of Sciences)—B. S. in M. E. (4 years).
6. Clemson Agricultural College—B. S. in M. E. (4 years).
7. Cornell University (Sibley College of Mechanical Engineering and Mechanic Arts)—M. E. (4 or 5 years).
8. George Washington University (College of Engineering)—B. S. in M. E. (4 years).
9. Harvard University (School of Engineering)—S. B. in M. E. (4 years).

10. Howard University (School of Applied Science)—B. S. in M. E. (4 years).
11. Iowa State College (Division of Engineering)—B. S. in M. E. (4 or 5 years).
12. Johns Hopkins University (Department of Engineering)—B. E. (4 years).
13. Kansas State Agricultural College (Division of Engineering)—B. S. in M. E. (4 years).
14. Lehigh University (Undergraduate Department)—M. E. (4 years).
15. Louisiana State University (College of Engineering)—B. S. (4 years).
16. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
17. Municipal University of Akron (College of Engineering)—M. E. (5-year cooperative course).
18. New York University (School of Applied Science)—B. S. in M. E. (4 years).
19. Ohio State University (College of Engineering)—B. M. E. (4 years).
20. Oregon State Agricultural College (School of Engineering)—B. S. in M. E. (4 years).
21. Pennsylvania State College (School of Engineering)—B. S. (4 years).
22. Purdue University (Undergraduate Department)—B. S. in M. E. (4 years).
23. Rensselaer Polytechnic Institute (Undergraduate Department)—M. E. (4 years).
24. State College of Washington (College of Mechanic Arts and Engineering)—B. S. in M. E. (4 years).
25. State University of Iowa (College of Applied Science)—B. Eng. (4 years).
26. Stevens Institute of Technology—M. E. (4 years).
27. Tufts College (Engineering School)—B. S. in M. E. (4 years).
28. Tulane University of Louisiana (College of Technology)—B. E. (4 years).
29. University of Arizona (Undergraduate Department)—B. S. in M. E. (4 years).
30. University of California (College of Mechanics)—B. S. (4 years).
31. University of Cincinnati (College of Engineering)—B. S. in M. E. (4 years); M. E. (5-year cooperative course).
32. University of Illinois (College of Engineering)—B. S. in M. E. (4 years).
33. University of Kansas (School of Engineering)—B. S. in Eng. (4 years); B. S. (5 years).
34. University of Michigan (College of Engineering)—B. S. in Eng. (4 years).
35. University of Minnesota (College of Engineering and Architecture)—B. S. in Eng. (4 years).
36. University of Missouri (School of Engineering)—M. E. (5 years); (School of Mines and Metallurgy)—B. S. in M. E. (4 years).
37. University of Nebraska (College of Engineering)—B. Sc. in M. E. (4 years).
38. University of Notre Dame (College of Engineering)—M. E. (4 years).
39. University of Pennsylvania (Towne Scientific School)—B. S. in M. E. (4 years).
40. University of Pittsburgh (School of Engineering)—B. S. in M. E. (4 years).
41. University of Texas (College of Engineering)—B. S. in M. E. (4 years).
42. University of Virginia (Department of Engineering)—M. E. (4 years).
43. University of Washington (College of Engineering)—B. S. in M. E. (years).
44. University of Wisconsin (College of Engineering)—B. S. in M. E. (4 years)
45. Vanderbilt University (Engineering Department)—B. E. (4 years).
46. Washington University (St. Louis) (School of Engineering)—B. S. in M. E (4 years).
47. Worcester Polytechnic Institute (Undergraduate Department)—B. S. (years).
48. Yale University (Sheffield Scientific School)—B. S. (4 years).

GRADUATE COURSES.

Degrees: M. S. (or S. M.), M. S. in M. E., M. E., M. M. E.

1. Agricultural and Mechanical College of Texas (Graduate Department)—M. E. (1 year).
2. Alabama Polytechnic Institute (Graduate Department)—M. E. (1 year).
3. Armour Institute of Technology (Graduate Department)—M. E. (3 years).
4. Case School of Applied Science (Graduate Department)—M. E. (3 years).
5. Catholic University of America (School of Sciences)—M. E. (2 years).
6. Columbia University (School of Engineering)—M. E. (3 years).
7. Cornell University (Graduate School)—M. M. E. (1 year).
8. George Washington University (School of Graduate Studies)—M. E. (1 year).
9. Harvard University (School of Engineering)—S. M. in M. E. (1 year).
10. Iowa State College (Graduate Division)—M. E. (2 or 5 years).
11. Johns Hopkins University (Department of Engineering)—M. M. E. (2 years).
12. Leland Stanford Junior University (Graduate Department)—M. E. (1 year).
13. Louisiana State University (Graduate Department)—M. E. (1 or 2 years):
14. New York University (School of Applied Science)—M. E. (1 year).
15. Ohio State University (Graduate School)—M. S. in Eng. (1 year); M. E. (2 to 4 years).
16. Oregon State Agricultural College (School of Engineering)—M. E. (1 year).
17. Pennsylvania State College (Graduate Department)—M. E. (time not designated).
18. Purdue University (Graduate Department)—M. E. (1 year).
19. Rensselaer Polytechnic Institute (Graduate Department)—M. M. E. (1 year).
20. State College of Washington (College of Mechanic Arts and Engineering)—M. E. (1 or 3 years).
21. State University of Iowa (College of Applied Science)—M. E. (4 years).
22. Tulane University of Louisiana (Faculty of Graduate Studies)—M. E. (1 or 2 years).
23. University of California (Graduate School)—M. E. (3 years).
24. University of Illinois (Graduate School)—M. E. (3 years).
25. University of Kansas (Graduate School)—Mech. E. (3 years).
26. University of Michigan (Graduate School)—M. S. in Eng. (1 year); M. E. (1 year—registration for degree not less than 5 years after award of bachelor's degree).
27. University of Minnesota (College of Engineering and Architecture)—M. E. (1 year).
28. University of Nebraska (Graduate College)—M. S. in M. E. (1 year); M. E. (1 year—registration for degree not less than 5 years after bachelor's degree is awarded).
29. University of Pittsburgh (School of Engineering)—M. E. (3 years).
30. University of Washington (College of Engineering)—M. S. in M. E. (1 year); M. E. (1 or 2 years).
31. University of Wisconsin (Graduate School)—M. E. (1 to 3 years).
32. Vanderbilt University (Engineering Department)—M. E. (1 year).
33. Washington University (St. Louis) (School of Engineering)—M. E. (3 years).
34. Worcester Polytechnic Institute (Graduate Department)—M. E. (1 to 3 years).
35. Yale University (Graduate School)—M. E. (1 year); M. S. (2 years).

METALLURGICAL ENGINEERING SCHOOLS (OR DEPARTMENTS OR COLLEGES).

UNDERGRADUATE COURSES.

Degrees: B. S. (or S. B.) in Metallurgy, B. S. in Met. E., B. S. in Mining, Engineering, and Metallurgy, Met. E., B. S

1. Case School of Applied Science (Undergraduate Department)—B. S. in Metallurgy (4 years).
2. Harvard University (School of Engineering)—S. B. in Metallurgy (4 years).
3. Lehigh University (Undergraduate Department)—Met. E. (4 years).
4. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
5. University of Arizona (Undergraduate Department)—B. S. in Mining, Engineering, and Metallurgy (4 years).
6. University of California (College of Mining)—B. S. (4 years).
7. University of Cincinnati (College of Engineering)—Met. E. (5-year cooperative course).
8. University of Minnesota (School of Mines)—Met. E. (4 years).
9. University of Missouri (School of Mines and Metallurgy)—B. S. in Metallurgy (4 years).
10. University of Pittsburgh (School of Mines)—Met. E. (4 years).
11. University of Washington (School of Mines)—B. S. in Met. E. (4 years).
12. Yale University (Sheffield Scientific School)—B. S. (4 years).

GRADUATE COURSES.

Degrees: Met. E. (or Metallurgical Engineer, Metallurgical E.), M. S., S. D.

1. Columbia University (School of Mines)—Met. E. (3 years).
2. Harvard University (School of Engineering)—Met. E. (1 year), S. D. (time not designated).
3. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).
4. University of California (Graduate School)—Metallurgical E. (3 years).
5. University of Missouri (School of Mines and Metallurgy)—Metallurgical Engineer (2 years).
6. University of Washington (College of Mines)—Met. E. (3 years).
7. Yale University (Graduate School)—Met. E. (1 year), M. S. (2 years).

MINING ENGINEERING COLLEGES (OR SCHOOLS OR DIVISIONS OR DEPARTMENTS).

UNDERGRADUATE COURSES.

Degrees: B. S. (or S. B.) in Mining Engineering, B. E. M., E. M., B. S., B. S. in Coal Mining Engineering, B. S. in Mining, Engineering, and Metallurgy, E. M. in Geology.

1. Alabama Polytechnic Institute (College of Engineering, Mines, and Architecture)—B. S. (4 years).
2. Case School of Applied Science (Undergraduate Department)—B. S. (4 years).
3. Colorado State School of Mines—E. M. (4 years).
4. Harvard University (School of Engineering)—S. B. in Mining Engineering (4 years).
5. Iowa State College (Division of Engineering)—B. S. in Mining Engineering (4 or 5 years).
6. Lehigh University (Undergraduate Department)—E. M. (4 years).

7. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
8. Michigan College of Mines—E. M. (4 years), B. S. (4 years).
9. Northwestern University (College of Engineering)—E. M. (4 years).
10. Ohio State University (College of Engineering)—B. E. M. (4 years).
11. Oregon State Agricultural College (School of Mines)—B. S. in Mining Engineering (4 years).
12. Pennsylvania State College (School of Mines)—B. S. (4 years).
13. State College of Washington (School of Mines)—B. S. in Mining Engineering (4 years).
14. University of Arizona (Undergraduate Department)—B. S. in Mining, Engineering, and Metallurgy (4 years).
15. University of California (College of Mining)—B. S. (4 years).
16. University of Illinois (College of Engineering)—B. S. in Mining Engineering (4 years).
17. University of Kansas (School of Engineering)—B. S. in Engineering (4 years), B. S. (5 years).
18. University of Minnesota (School of Mines)—E. M. (4 years), E. M. in Geology (4 years).
19. University of Missouri (School of Mines and Metallurgy)—B. S. in Mine Engineering (4 years).
20. University of Notre Dame (College of Engineering)—E. M. (4 years).
21. University of Pittsburgh (School of Mines)—E. M. (4 years).
22. University of Southern California (College of Liberal Arts—Undergraduate Department)—2-year course.
23. University of Virginia (Department of Engineering)—E. M. (4 years).
24. University of Washington (College of Mines)—B. S. in Mining Engineering (4 years), B. S. in Coal Mining Engineering (4 years).
25. University of Wisconsin (College of Engineering)—B. S. in Mining Engineering (4 years).
26. Yale University (Sheffield Scientific School)—B. S. (4 years).

GRADUATE COURSES.

Degrees: E. M., M. S., M. S. in Mining Engineering, S. D.

1. Alabama Polytechnic Institute (Graduate Department)—E. M. (1 year).
2. Case School of Applied Science (Graduate Department)—E. M. (1 year).
3. Colorado State School of Mines (Graduate Department)—M. S. (1 year).
4. Columbia University (School of Mines)—E. M. (3 years).
5. Harvard University (School of Engineering)—E. M. (1 year), S. D. (time not designated).
6. Iowa State College (Graduate Division)—E. M. (2 or 5 years).
7. Leland Stanford Junior University (Graduate Department)—E. M. (1 year).
8. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).
9. Pennsylvania State College (Graduate Department)—E. M. (time not designated).
10. State College of Washington (School of Mines)—E. M. (1 or 3 years).
11. University of Arizona (Graduate Department)—E. M. (1 year).
12. University of California (Graduate School)—E. M. (3 years).
13. University of Kansas (Graduate School)—E. M. (3 years).
14. University of Missouri (School of Mines and Metallurgy)—E. M. (2 years).

15. University of Washington (College of Mines)—E. M. (3 years), M. S. in Mining Engineering (1 year).
16. University of Wisconsin (Graduate School)—E. M. (1 or 3 years).
17. Yale University (Graduate School)—E. M. (1 year), M. S. (2 years).

ARCHITECTURAL ENGINEERING SCHOOLS (OR COLLEGES OR DEPARTMENTS).

UNDERGRADUATE COURSES.

Degrees: B. S. (or B. Sc.). in Arch. E., B. Arch. E., B. S.

1. Alabama Polytechnic Institute (College of Engineering, Mines and Architecture)—B. S. (4 years).
2. Catholic University of America (School of Sciences—Undergraduate Department)—B. S. in Arch. E. (4 years).
3. Iowa State College (Division of Engineering)—B. S. in Arch. E. (4 or 5 years).
4. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
5. Ohio State University (College of Engineering)—B. Arch. E. (4 years).
6. University of Illinois (College of Engineering)—B. S. in Arch. E. (4 years).
7. University of Kansas (School of Engineering)—B. S. in Eng. (4 years), B. S. (5 years).
8. University of Nebraska (College of Engineering)—B. Sc. in Arch. E. (4 years).
9. University of Notre Dame (College of Architecture)—B. S. in Arch. E. (4 years).
10. University of Pennsylvania (Towne Scientific School)—B. S. in Arch. E. (4 years).
11. University of Texas (College of Engineering)—B. S. in Arch. E. (4 years).

GRADUATE COURSES.

Degrees: Arch. E., M. S. in Arch. E., M. S.

1. Iowa State College (Graduate Division)—M. S. in Arch. E. (2 or 5 years).
2. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).
3. Ohio State University (Graduate School)—Arch. E. (2 or 3 years).
4. University of Illinois (Graduate School)—Arch. E. (3 years).
5. University of Kansas (Graduate School)—Arch. E. (3 years).
6. University of Minnesota (College of Engineering and Architecture—Arch. E. (5 years).
7. University of Notre Dame (College of Architecture)—M. S. in Arch. E. (1 year).
8. University of Texas (College of Engineering)—M. S. in Arch. E. (1 year).

AERONAUTICAL ENGINEERING.

GRADUATE COURSES.

Degrees: Ae. E., Aeronautical Engineer.

1. Massachusetts Institute of Technology (Graduate Department)—Aeronautical Engineer (1 year).
2. University of Michigan (Graduate School)—Ae. E. (1 year—registration for degree not less than 5 years after bachelor's degree).

CERAMIC ENGINEERING.

UNDERGRADUATE COURSES.

Degrees: B. S. in Ceramic Engineering, B. Cr. E.

1. Iowa State College (Division of Engineering)—B. S. in Ceramic Engineering (4 years).
2. Ohio State University (College of Engineering)—B. Cr. E. (4 years).
3. Oregon State Agricultural College (School of Mines)—B. S. in Ceramic Engineering (4 years).

GRADUATE COURSE.

Degree: Cr. E.

1. Ohio State University (Graduate School)—Cr. E. (2 to 4 years).

GEOLOGICAL ENGINEERING DEPARTMENTS.

UNDERGRADUATE COURSES.

Degrees: B. S., E. M. (Geology).

1. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 years).
2. University of Minnesota (School of Mines)—E. M. (Geology) (4 years).

GRADUATE COURSE.

Degree: M. S.

1. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).

MUNICIPAL AND SANITARY ENGINEERING COLLEGES (OR DEPARTMENTS OR SCHOOLS).

UNDERGRADUATE COURSES.

Degrees: B. S. (or S. B.) in Municipal and Sanitary Engineering, B. S., B. S. in San. E.

1. Harvard University (School of Engineering)—S. B. in Sanitary Engineering (4 years).
2. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
3. University of Illinois (College of Engineering)—B. S. in Municipal and Sanitary Engineering (4 years).
4. University of Pittsburgh (School of Engineering)—B. S. in San. Eng. (4 years).

GRADUATE COURSES.

Degrees: C. E., M. S., S. M. in Sanitary Engineering, San. E.

1. Harvard University (School of Engineering)—S. M. in Sanitary Engineering (1 year).
2. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).
3. University of Illinois (Graduate School)—C. E. (3 years).
4. University of Pittsburgh (School of Engineering)—San. E. (3 years).

RAILWAY ENGINEERING COLLEGES (OR SCHOOLS).

UNDERGRADUATE COURSES.

Degrees: B. S. in Railway C. E., B. S. in Railway E. E., B. S. in Railway M. E., B. S. in R. M. E.

1. University of Illinois (College of Engineering)—B. S. in Railway C. E. (4 years), B. S. in Railway E. E. (4 years), B. S. in Railway M. E. (4 years).
2. University of Pittsburgh (School of Engineering)—B. S. in R. M. E. (4 years).

GRADUATE COURSES.

Degrees: C. E., E. E., M. E.

1. University of Illinois (Graduate School)—C. E. (3 years), E. E. (3 years), M. E. (3 years).
2. University of Pittsburgh (School of Engineering)—R. M. E. (3 years).

NAVAL ARCHITECTURE AND MARINE ENGINEERING DEPARTMENTS.

UNDERGRADUATE COURSES.

Degrees: B. S., N. E.

1. Lehigh University (Undergradute Department)—N. E. (4 years).
2. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
3. University of Michigan (College of Engineering)—B. S. (4 years).

GRADUATE COURSES.

Degrees: Nav. Arch., Mar. E.

1. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).
2. University of Michigan (Graduate School)—Nav. Arch., Mar. E. (1 year—registration for degree not less than 5 years after bachelor's degree).

FIRE PROTECTION ENGINEERING DEPARTMENT.

UNDERGRADUATE COURSE.

Degree: B. S. in Fire Protection Engineering.

1. Armour Institute of Technology (Undergraduate Department)—B. S. in Fire Protection Engineering (4 years).

GRADUATE COURSE.

Degree: Fire Protection E.

1. Armour Institute of Technology (Graduate Department)—Fire Protection E. (3 years).

AGRICULTURAL ENGINEERING COLLEGES (OR DIVISIONS).

UNDERGRADUATE COURSES.

Degree: B. S. in Agr. Eng. (or B. Sc. in Agr. Eng.)

1. Agricultural and Mechanical College of Texas (Undergraduate Department)—B. S. in Agr. Eng. (4 years).
2. Iowa State College (Division of Agriculture)—B. S. in Agr. Eng. (4 years). (Division of Engineering)—B. S. in Agr. Eng. (4 years).
3. Kansas State Agricultural College (Division of Engineering)—B. S. in Agr. Eng. (4 years).
4. University of Missouri (School of Engineering)—B. S. (4 years).
5. University of Nebraska (College of Engineering)—B. Sc. in Agr. Eng. (4 years).

GRADUATE COURSES.

Degrees: M. S. in Agr. Eng., A. E. (or Agr. E.).

1. Iowa State College (Division of Agriculture)—M. S. in Agr. Eng. (1 year). (Division of Engineering)—M. S. in Agr. Eng. (1 year), A. E. (2 or 5 years).
2. University of Missouri (School of Engineering)—A. E. (1 year).
3. University of Nebraska (Graduate College)—M. S., in Agr. Eng. (1 year), Agr. E. (1 year).

ENGINEERING ADMINISTRATION DEPARTMENT.

UNDERGRADUATE COURSE.

Degree: B. S.

1. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 years).

GRADUATE COURSE.

Degree: M. S.

1. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).

PETROLEUM ENGINEERING.

UNDERGRADUATE COURSES.

Degrees: B. S., Pet. E.

1. University of California (College of Mining)—B. S. (4 years).
2. University of Pittsburgh (School of Mines)—Pet. E. (4 years).

SUGAR ENGINEERING (OR SUGAR TECHNOLOGY) SCHOOLS OR DEPARTMENTS.

UNDERGRADUATE COURSES.

Degrees: B. S., B. S. in Sugar Technology.

1. College of Hawaii (Undergradute Department)—B. S. in Sugar Technology (4 years).
2. Louisiana State University (Audubon Sugar School)—B. S. (5 years).

AGRICULTURE.

Agricultural Colleges (or Departments or Divisions or Schools).

UNDERGRADUATE COURSES.

Degrees: B. S. (or B. Sc.), B. S. (Agr.), B. S. (or B. Sc.) in Agr., B. S. in Farm Crops and Soils, B. S. in Farm Management, B. S. in Sugar Technology, B. S. in Floriculture, B. S. in Agronomy, B. S. in Animal Husbandry, B. S. in Dairying, B. S. in Horticulture, B. S. in Entomology, Certificate in Agr., Graduate in Agr.

1. Agricultural and Mechanical College of Texas (Undergraduate Department, B. S. in Agr. (4 years).
2. Alabama Polytechnic Institute (College of Agricultural Sciences)—B. S. (4 years).
3. Clemson Agricultural College—B. S. in Agr. (4 years).
4. College of Hawaii (Undergraduate Department)—B. S. in Agr. (4 years).
5. Cornell University (New York State College of Agriculture)—B. S. (4 years).
6. Iowa State College (Division of Agriculture)—B. C. in Agriculture and Manual Training (4 years), B. S. in Animal Husbandry (4 years), B. S. in Dairying (4 years), B. S. in Horticulture (4 years), B. S. in Farm Crops and Soils (4 years), B. S. in Farm Management (5 years), B. S. (in specified subjects) (5 years), Certificate in Agriculture (2 years).
7. Kansas State Agricultural College (Division of Agriculture)—B. S. in Agriculture (4 years).
8. Louisiana State University (Department of Agriculture)—B. S. (4 years).
9. Massachusetts Agricultural College (Undergraduate Department)—B. S. (4 years).
10. Ohio State University (College of Agriculture)—B. S. in Agr. (4 years), B. S. in Horticulture (4 years), B. S. in Entomology (4 years).
11. Oregon State Agricultural College (School of Agriculture)—B. S. (4 years).
12. Pennsylvania State College (School of Agriculture)—B. S. (4 years).
13. Purdue University (Undergraduate Department)—B. S. in Agr. (4 years).
14. State College of Washington (College of Agriculture)—B. S. in Agr. (4 years).
15. University of Arizona (Undergraduate Department)—B. S. in Agr. (4 years).
16. University of California (College of Agriculture)—B. S. (4 years).
17. University of Illinois (College of Agriculture)—B. S. in Agr. (4 years); B. S. in Floriculture (4 years).
18. University of Minnesota (College of Agriculture)—B. S. (4 years).
19. University of Missouri (College of Agriculture)—B. S. in Agr. (4 years).
20. University of Nebraska (College of Agriculture)—B. Sc. in Agr. (4 years).
21. University of Wisconsin (College of Agriculture)—B. S. in Agr. (4 years), Graduate in Agriculture (2 years).

GRADUATE COURSES.

Degrees: M. S., M. S. in Agr., M. S. A., M. S. (in specific subjects), Ph. D. Agr.

1. College of Hawaii (Graduate Department)—M. S. A. (1 year).
2. Cornell University (Graduate School)—M. S. in Agr. (1 year).
3. Iowa State College (Division of Agriculture)—M. S. and M. S. (in specific subjects) (2 years).
4. Louisiana State University (Graduate Department)—M. S. (1 year).
5. Massachusetts Agricultural College (Graduate School)—M. S. (1½ years), M. S. Agr. (1½ years), Ph. D. Agr. (3 years).

6. Ohio State University (Graduate School)—M. S. (1 year).
7. Oregon State Agricultural College (School of Agriculture)—M. S. (1 year).
8. Purdue University (Graduate Department)—M. S. in Agr. (1 year).
9. State College of Washington (College of Agriculture)—M. S. in Agr. (1 year).
10. University of California (College of Agriculture)—M. S. (1 year), (Graduate School of Tropical Agriculture)—M. S. (1 year).
11. University of Illinois (Graduate School)—M. S. (in specific subjects) (1 year).
12. University of Minnesota (Graduate School)—M. S. (1 year).
13. University of Wisconsin (Graduate School)—M. S. (1 year).

Forestry Schools (or Divisions or Colleges).

UNDERGRADUATE COURSES.

Degrees: B. S., B. S. (or B. Sc.) in Forestry.

1. Iowa State College (Division of Agriculture)—B. S. in Forestry (4 years).
2. Oregon State Agricultural College (School of Forestry)—B. S. (4 years), B. S. in Logging Engineering (4 years).
3. University of Michigan (College of Literature, Science, and the Arts)—B. S. in Forestry (4 years).
4. University of Minnesota (College of Forestry)—B. S. (4 years).
5. University of Missouri (College of Agriculture)—B. S. in Forestry (4 years).
6. University of Washington (College of Forestry)—B. S. (4 years).

GRADUATE COURSES.

Degrees: M. S. in Forestry, M. S. F., M. F.

1. Cornell University (Graduate School)—M. F. (1 year).
2. Harvard University (Graduate School of Applied Biology)—M. F. (2 years).
3. Iowa State College (Division of Agriculture)—M. F. (1 year).
4. University of Michigan (Graduate School)—M. S. in Forestry (1 year).
5. University of Missouri (College of Agriculture)—M. F. (1 year).
6. University of Washington (College of Forestry)—M. S. F. (1 year).
7. Yale University (School of Forestry)—M. F. (2 years).

Landscape Gardening Colleges (or Schools).

UNDERGRADUATE COURSES.

Degrees: B. A., B. S. in Landscape Gardening (or Architecture), B. S., B. Sc.

1. Iowa State College (Division of Agriculture)—B. S. in Landscape Architecture (4 years).
2. Ohio State University (College of Agriculture)—B. Sc. (4 years).
3. University of Illinois (College of Agriculture)—B. S. in Landscape Gardening (4 years).
4. University of Michigan (College of Literature, Science, and the Arts)—B. A. (4 years), B. S. (4 years).

GRADUATE COURSES.

Degrees: M. L. D. (or Master of Landscape Design), M. L. A.

1. Cornell University (Graduate School)—Master in Landscape Design (1 year).
2. Harvard University (Graduate School of Architecture and Landscape Architecture)—M. L. A. (2½ years).

3. Massachusetts Agricultural College (Graduate School)—M. L. A. (1½ years).
4. University of Michigan (Graduate School)—M. L. D. (1 year).

INDUSTRY.

COLLEGES (OR SCHOOLS OR DEPARTMENTS) OF COMMERCE.

UNDERGRADUATE COURSES.

Degrees: B. S., B. S. in Accounting, B. S. in Business Administration, B. Sc. in Bus., B. S. in Commerce, B. S. in Economics, Bachelor of Commerce, A. B., B. A. in Commerce, Ph. B., Ph. B. in Commerce, Ph. B. in Foreign Commerce, B. B. A., B. C. S., Certificate.

1. Columbia University (School of Business)—B. S. (4 years).
2. Howard University (School of Commerce and Finance)—B. S. in Commerce (4 years).
3. Lehigh University (Undergraduate Department)—B. S. in Business Administration (4 years).
4. New York University (School of Commerce, Accounts, and Finance)—B. C. S. (3 years); College of Arts and Pure Science—B. S. in Commerce (4 years).
5. Northwestern University (School of Commerce)—B. B. A. (3 years, plus 2 years of college work).
6. Ohio State University (College of Commerce and Journalism)—B. S. in Accounting (4 years), B. S. in Business Administration (4 years).
7. Oregon State Agricultural College (School of Commerce)—B. S. (4 years).
8. St. Louis University (School of Commerce and Finance)—B. C. S. (3 years), Certificate.
9. Simmons College (Undergraduate Department)—B. S. (4 years); certificate for secretarial studies; short course in secretarial studies.
10. State College of Washington (College of Science and Arts)—A. B. (4 years).
11. University of Arizona (Undergraduate Department)—B. S. in Commerce (4 years).
12. University of California (College of Commerce)—B. S. (4 years).
13. University of Chicago (College of Commerce and Administration)—(Undergraduate Department)—Ph. B. (4 years); (College of Religious and Social Sciences)—Ph. B. (4 years).
14. University of Cincinnati (College of Commerce)—B. S. (4 years—cooperative course, 5 years).
15. University of Illinois (College of Commerce and Business Administration)—B. S. (4 years).
16. University of Michigan (College of Literature, Science, and the Arts)—Certificate with A. B. (4 years).
17. University of Minnesota (College of Science, Literature, and the Arts)—B. S. (4 years).
18. University of Missouri (School of Business and Public Administration)—B. S. in Commerce (4 years).
19. University of Nebraska (College of Business Administration)—B. Sc. in Bus. (4 years).
20. University of North Carolina (School of Commerce)—B. S. (4 years).
21. University of Notre Dame (College of Arts and Letters)—Ph. B. in Commerce (4 years), Ph. B. in Foreign Commerce (4 years).
22. University of Oregon (School of Commerce)—A. B. (4 years), B. S. in Commerce (4 years).

23. University of Pennsylvania (Wharton School of Finance and Commerce)—B. S. in Economics (4 years), Certificate (2 years).
24. University of Pittsburgh (School of Economics)—B. S. in Economics (4 years).
25. University of Texas (College of Arts)—B. B. A. (4 years).
26. University of Washington (College of Business Administration)—B. B. A. (4 years).
27. University of Wisconsin (College of Letters and Science)—B. A. in Commerce (4 years).
28. Washington University (St. Louis) (School of Commerce and Finance)—B. S. in Commerce (4 years).

GRADUATE COURSES.

Degrees: A. M., E. A. (Engineering Administrator), M. S., M. B. A., M. C. S., Ph. D.

1. Columbia University (School of Business)—M. S. (1 year).
2. Dartmouth College (Amos Tuck School of Administration and Finance)—M. C. S. (2 years).
3. Harvard University (Graduate School of Business Administration)—M. B. A. (2 years).
4. New York University (School of Commerce, Accounts, and Finance)—M. C. S. (1 year), M. B. A. (2 years).
5. Simmons College (Graduate Department)—M. S. (1 year).
6. University of Chicago (College of Commerce and Administration)—A. M. (1 year), Ph. D. (3 years).
7. University of Michigan (Graduate School)—Special Certificate, with or without a degree (4 years).
8. University of Notre Dame (Graduate Department)—E. A. (Engineering Administrator) (1 year).
9. University of Texas (Graduate School)—M. B. A. (1 year).
10. University of Washington (College of Business Administration)—M. B. A. (1 year).
11. Washington University (St. Louis) (Graduate School)—M. S. in Commerce (1 year).

INDUSTRIAL ARTS DEPARTMENTS (OR DIVISIONS OR SCHOOLS).

UNDERGRADUATE COURSES.

Degrees: B. S., B. S. in Industrial Arts, B. S. in Practical Arts.

1. Armour Institute of Technology (Undergraduate Department)—B. S. in Industrial Arts (4 years).
2. Clemson Agricultural College (Undergraduate Department)—B. S. in Industrial Arts (4 years).
3. Columbia University (Teachers College—School of Practical Arts)—B. S. in Practical Arts (4 years).
4. Oregon State Agricultural College (School of Engineering)—B. S. in Industrial Arts (4 years).
5. University of Arizona (Undergraduate Department)—B. S. in Industrial Arts (4 years).

GRADUATE COURSE.

Degree: M. S.

1. Columbia University (Teachers' College—School of Practical Arts)—M. S. (1 year).

INDUSTRIAL OR GENERAL SCIENCE DIVISIONS.

UNDERGRADUATE COURSES.

Degrees: B. S., B. S. and B. S. in Home Economics, B. S. and B. S. in specific agricultural subjects, B. S. in Science and Agriculture, B. S. and D. V. M., B. S. in Industrial Journalism, B. S. in Agricultural Chemistry, B. S. in Biochemistry, B. S. in Industrial Chemstry.

1. Iowa State College (Division of Industrial Science)—B. S. (4 years), B. S. and B. S. in Home Economics (5 years), B. S. in Science and Agriculture (5 years), B. S. and B. S. in specific agricultural subjects (5 years), B. S. and D. V. M. (6 years).
2. Kansas State Agricultural College (Division of General Science)—B. S. (4 years), B. S. in Industrial Journalism (4 years), B. S. in Agricultural Chemistry (4 years), B. S. in Biochemistry (4 years), B. S. in Industrial Chemistry (4 years).

HOME ECONOMICS, HOUSEHOLD ARTS OR SCIENCE (OR HOUSEHOLD ECONOMY) SCHOOLS (OR DIVISIONS OR DEPARTMENTS).

UNDERGRADUATE COURSES.

Degrees: A. B., B. S. (or B. Sc.) in Home Economics, B. S. (Home Economics), B. S. in H. E., B. S. in Household Science, B. S. in Household Economy, Certificate or Diploma.

1. Columbia University (School of Practical Arts)—Diploma (4 years).
2. Howard University (School of Applied Science)—B. S. in H. E. (4 years).
3. Indiana University (College of Liberal Arts)—B. S. (4 years).
4. Iowa State College (Division of Home Economics)—B. S. in Home Economics (4 years), B. S. (4 years, combined course in home economics and agriculture).
5. Kansas State Agricultural College (Division of Home Economics)—B. S. in Home Economics (4 years).
6. Municipal University of Akron (Curtis School of Home Economics)—B. S. in Home Economics (4 years).
7. Ohio State University (College of Agriculture)—B. Sc. in Home Economics (4 years).
8. Oregon State Agricultural College (School of Home Economics)—B. S. (4 years).
9. Pennsylvania State College (Department of Home Economics)—B. S. (4 years).
10. Simmons College (Undergraduate Department)—B. S. (4 years), Certificate (short course).
11. State College of Washington (College of Home Economics)—B. S. (4 years), A. B. (4 years).
12. Tulane University of Louisiana (H. Sophie Newcomb Memorial College)—Diploma in Household Economy (short course).
13. University of Arizona (Undergraduate Department)—B. S. in Home Economics (4 years).
14. University of California (College of Letters and Science)—A. B. (4 years).
15. University of Cincinnati (School of Home Economics)—B. S. (4 years), B. S. (cooperative course, 5 years).
16. University of Illinois (College of Agriculture)—B. S. in Home Economics (4 years).
17. University of Minnesota (College of Agriculture, Forestry, and Home Economics)—B. S. (4 years).

18. University of Nebraska (College of Agriculture)—B. Sc. in H. E. (4 years).
19. University of Texas (College of Arts)—B. S. in H. E. (4 years).
20. University of Washington (College of Science)—B. S. in Home Economics (4 years), (College of Liberal Arts)—A. B. (4 years).
21. University of Wisconsin (College of Agriculture)—B. S. (Home Economics) (4 years), Graduate in Home Economics (2 years).

GRADUATE COURSES.

Degrees: M. S., M. S. in Home Economics, M. A.

1. Iowa State College (Graduate Division)—M. S. (1 year).
2. Ohio State University (Graduate School)—M. S. (1 year).
3. Oregon State Agricultural College (School of Home Economics)—M. S. (1 year).
4. Pennsylvania State College (Department of Home Economics)—M. S. (1 year).
5. State College of Washington (College of Home Economics)—M. S. (1 year), M. A. (1 year).
6. University of California (Graduate School)—M. A. (1 year).
7. University of Illinois (Graduate School)—M. S. (1 year).
8. University of Minnesota (Graduate School)—M. S. (1 year).

LIBRARY SCIENCE SCHOOLS (OR DEPARTMENTS OR COLLEGES OR COURSES).

UNDERGRADUATE COURSES.

Degrees: A. B., B. A. and Certificate, B. S., Certificate.

1. Simmons College (School of Library Science)—B. S. (4 years), Certificate (short course).
2. University of Washington (College of Liberal Arts)—A. B. (4 years).
3. University of Wisconsin (Library School)—B. A. and Certificate of Library School (4 years and 1 summer session).
4. Western Reserve University (College for Women and Library School)—A. B. and Certificate of Library School (4 years).

GRADUATE COURSES.

Degrees: Bachelor of Library Science, M. S.

1. Simmons College (Graduate Department)—M. S. (1 year).
2. University of Illinois (Library School)—Bachelor of Library Science (2 years).

TEXTILE INDUSTRY DEPARTMENTS.

UNDERGRADUATE COURSES.

Degrees: B. S. in Textile Industry, B. S. in Textile Engineering.

1. Agricultural and Mechanical College of Texas (School of Engineering)—B. S. in Textile Engineering (4 years).
2. Clemson Agricultural College (Undergraduate Department)—B. S. in Textile Industry (4 years).

JOURNALISM, SCHOOLS OR COURSE.

UNDERGRADUATE COURSES.

Degrees: A. B., B. A. in Journalism, B. J., B. Lit., B. S. in Journalism, Ph. B. in Journalism.

1. Columbia University (School of Journalism)—B. Lit. (4 years).
2. Ohio State University (School of Commerce and Journalism)—B. S. in Journalism (4 years).
3. University of Missouri (School of Journalism)—B. J. (4 years).
4. University of Notre Dame (College of Arts and Letters)—Ph. B. in Journalism (4 years).
5. University of Oregon (School of Journalism)—A. B. (4 years).
6. University of Texas (College of Arts)—B. J. (4 years).
7. University of Washington (College of Liberal Arts)—A. B. (4 years).
8. University of Wisconsin (Course in Journalism)—B. A. in Journalism (4 years).

GRADUATE COURSES.

Degrees: M. J., M. S.

1. Columbia University (School of Journalism)—M. S. (1 year).
2. University of Texas (Graduate School)—M. J. (1 year).

ART.

COLLEGES (OR SCHOOLS OR DEPARTMENTS) OF FINE ARTS.

UNDERGRADUATE COURSES.

Degrees: B. F. A. (or B. Fine Arts), B. S., B. Des. (Bachelor of Design), B. Painting, B. S. in Interior Decoration, Diploma, Certificate.

1. Randolph-Macon Woman's College (Undergraduate Department)—Certificate.
2. Tulane University of Louisiana (H. Sophie Newcomb Memorial College)—B. Des. (4 years). Short course.
3. University of California (California School of Fine Arts, at San Francisco)—Certificate.
4. University of Kansas (School of Fine Arts)—B. Painting (4 years); Artist's Certificate (4 years); Teacher's Certificate (3 years); Public School Art Certificate (2 years).
5. University of Minnesota (College of Literature, Science, and the Arts)—B. S. in Interior Decoration (4 years).
6. University of Nebraska (School of Fine Arts)—B. F. A. (4 years).
7. University of Southern California (College of Fine Arts)—B. Fine Arts (4 years).
8. University of Washington (College of Fine Arts)—Certificate (2 years).
9. Washington University (St. Louis) (School of Fine Arts).
10. Western Reserve University (College for Women and Cleveland School of Art)—B. S. (6 years).
11. Yale University (School of the Fine Arts)—B. F. A. (4 and 5 years).

SCHOOLS (OR COLLEGES OR DEPARTMENTS) OF ARCHITECTURE.

UNDERGRADUATE COURSES.

Degrees: A. B., B. F. A., B. S., B. S. (or B. Sc.) in Arch., B. Arch., Certificate.

1. Agricultural and Mechanical College of Texas (Undergraduate Department)—B. S. in Arch. (4 years).
2. Armour Institute of Technology (Undergraduate Department)—B. S. in Arch. (4 years).
3. Catholic University of America (School of Sciences, Undergraduate Department)—B. S. in Arch. (4 years).
4. Clemson Agricultural College—B. S. in Arch. (4 years).
5. Columbia University (School of Architecture)—B. Arch. (4 years).
6. Cornell University (College of Architecture)—B. Arch. (4 to 6 years).
7. George Washington University (College of Engineering)—B. S. in Arch. (4 years).
8. Howard University (School of Applied Science)—B. S. in Arch. (4 years).
9. Kansas State Agricultural College (Division of Engineering)—B. S. in Arch. (4 years).
10. Massachusetts Institute of Technology (Undergraduate Department)—B. S. in Arch. (4 or 5 years).
11. Ohio State University (College of Engineering)—B. Arch. (4 years).
12. Tulane University of Louisiana (College of Technology)—B. Arch. (4 years).
13. University of California (College of Arts and Letters)—A. B. (4 years).
14. University of Illinois (College of Engineering)—B. S. in Arch. (4 years).
15. University of Michigan (College of Literature, Science, and the Arts)—B. S. in Arch. (4 years).
16. University of Minnesota (College of Engineering and Mechanic Arts)—B. S. in Arch. (4 years).
17. University of Notre Dame (College of Architecture)—B. S. in Arch. (4 years).
18. University of Oregon (School of Architecture and Allied Arts)—B. S. (4 years), A. B. (4 years).
19. University of Pennsylvania (Towne Scientific School)—B. S. in Arch. (4 years), Certificate (2 years).
20. University of Texas (College of Engineering)—B. S. in Arch. (4 years).
21. University of Washington (College of Fine Arts)—B. Arch. (4 years), Certificate (4 years).
22. Washington University (St. Louis) (School of Architecture)—B. Arch. (4 years).
23. Yale University (School of Fine Arts)—B. F. A. (4 years).

GRADUATE COURSES.

Degrees: Grad. in Arch., M. S. in Arch., M. Arch., Arch. (or Architect).

1. Cornell University (Graduate School)—M. Arch. (1 year).
2. Harvard University (Graduate School of Architecture)—M. Arch. (2 years).
3. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).
4. Ohio State University (Graduate School)—Architect (2 to 4 years).

5. Tulane University of Louisiana (College of Technology)—M. Arch. (2 years).
6. University of California (School of Architecture)—Grad. in Arch. (2 years).
7. University of Illinois (Graduate School)—M. Arch. (3 years).
8. University of Michigan (Graduate School)—M. S. in Arch. (1 year), Arch. (1 year).
9. University of Minnesota (College of Engineering and Mechanic Arts)—Architect (1 year).
10. University of Notre Dame (College of Architecture)—M. S. in Arch. (1 year).
11. University of Pennsylvania (Towne Scientific School)—M. S. in Arch. (1 year).
12. University of Texas (College of Engineering)—M. S. in Arch. (4 years).
13. Washington University (St. Louis) (School of Architecture)—M. S. in Arch. (1 year).

COLLEGES (OR SCHOOLS OR CONSERVATORIES OR DEPARTMENTS) OF MUSIC.

UNDERGRADUATE COURSES.

Degrees: B. A. in Music, B. Mus. or Mus. B., Graduate in Music, Diploma, Certificate, Teachers' Certificate.

1. Columbia University (Department of Music)—Diploma (4 years); School of Practical Arts, Diploma (4 years).
2. Howard University (School of Music)—B. Mus. (4 years).
3. Northwestern University (School of Music)—B. Mus.
4. Oberlin College (Conservatory of Music)—Mus. B. (4 years); Certificate in Public School Music (3 years).
5. Oregon State Agricultural College (School of Music)—(Credit given toward degree).
6. Randolph-Macon Woman's College (Undergraduate Department)—Certificate.
7. State College of Washington (School of Music and Applied Design)—B. A. in Mus. (4 years); Certificate (2 years).
8. State University of Iowa (School of Music)—B. Mus. (4 years).
9. Tulane University of Louisiana (H. Sophie Newcomb Memorial College)—B. Mus. (4 years), Diploma (short courses).
10. University of Illinois (School of Music)—B. Mus. (4 years).
11. University of Kansas (School of Fine Arts)—B. Mus. (4 years); Teachers' Certificate (3 years); Public School Music Certificate (2 years).
12. University of Minnesota (College of Science, Literature, and the Arts)—B. Mus. (4 years).
13. University of Notre Dame (College of Music)—B. Mus. (4 years).
14. University of Oregon (School of Music)—B. Mus. (4 years).
15. University of Pennsylvania (Undergraduate Department of Arts and Sciences)—Certificate (4 years).
16. University of Southern California (College of Music).
17. University of Washington (College of Fine Arts)—B. Mus. (4 years), B. A. in Mus. (4 years), Certificate (2 years).
18. University of Wisconsin (School of Music)—B. Mus. (4 years), Certificate (2 years), Music Supervisor's Course (2 years).
19. Yale University (School of Music)—Certificate (3 years).

GRADUATE COURSES.

Degrees: Mus. B. (or Mus. Bac.), M. Mus.

1. Northwestern University (School of Music)—M. Mus.
2. University of Pennsylvania (Graduate Department)—Mus. Bac. (1 year).
3. Yale University (School of Music)—Mus. B. (2 years).

COLLEGES (OR SCHOOLS) OF PUBLIC SPEAKING.

UNDERGRADUATE COURSES.

1. Northwestern University (School of Oratory).
2. University of Southern California (College of Oratory).

SCIENCES.

COLLEGES (OR DEPARTMENTS OR SCHOOLS OR COURSES) OF CHEMISTRY.

Degrees: B. A., B. S., B. S. in Chem., Ch., B. Chem.

1. Alabama Polytechnic Institute (Undergraduate Department)—B. S. (Chemistry and Metallurgy) (4 years).
2. Clemson Agricultural College (Undergraduate Department)—B. S. in Chem. (4 years).
3. Cornell University (College of Arts and Sciences)—B. Chem. (4 years).
4. George Washington University (Columbian College)—B. S. in Chem. (4 years).
5. Johns Hopkins University (Department of Engineering)—B. S. in Chem. (4 years).
6. Lehigh University (Undergraduate Department)—B. S. in Chem. (4 years).
7. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).
8. State College of Washington (College of Sciences and Arts)—B. S. (4 years).
9. State University of Iowa (College of Applied Science)—B. S. in Chem. (4 years).
10. Tufts College (School of Liberal Arts)—B. S. in Chem. (4 years).
11. University of Arizona (Undergraduate Department)—B. S. in Chem. (4 years).
12. University of California (College of Chemistry)—B. S. (4 years).
13. University of Illinois (College of Arts and Sciences)—B. S. (4 years).
14. University of Michigan (College of Literature, Sciences, and the Arts)—B. S. in Chem. (4 years).
15. University of Minnesota (School of Chemistry)—B. S. in Chem. (4 years), A. B. (4 years, combined arts and chemistry), B. S. in Chem. (5 years, combined arts and chemistry).
16. University of North Carolina (School of Applied Science)—B. S. in Chem. (4 years).
17. University of Notre Dame (College of Science)—B. S. in Chem. (4 years).
18. University of Pennsylvania (Towne Scientific School)—B. S. in Chem. (4 years).
19. University of Pittsburgh (School of Chemistry)—B. Chem. (4 years).
20. University of Wisconsin (Course in Chemistry)—B. S. in Chem. (4 years).
21. Worcester Polytechnic Institute (Undergraduate Department)—B. S. in Chem. (4 years).

GRADUATE COURSES.

Degree: M. S.

1. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).
2. State College of Washington (College of Sciences and Arts)—M. S. (1 year).
3. University of California (College of Chemistry)—M. S. (1 year).

ELECTROCHEMISTRY DEPARTMENT.

UNDERGRADUATE COURSE.

Degree: B. S.

1. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 or 5 years).

GRADUATE COURSE.

Degree: M. S.

1. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).

BIOLOGICAL DEPARTMENTS OR STATIONS.

UNDERGRADUATE COURSES.

Degrees: B. S., B. S. in Biol. (or Biology).

1. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 years). (Biology and public health.)
2. University of California (Scripps Institution for Biological Research).
3. University of Notre Dame (College of Science)—B. S. in Biol. (4 years).
4. University of Pennsylvania (Undergraduate Department of Arts and Sciences)—B. S. in Biology (3 to 5 years).
5. University of Washington (Puget Sound Biological Station).

GRADUATE COURSES.

Degrees: S. M., S. D.

1. Harvard University (Graduate School of Applied Biology)—S. M. (2 years), S. D. (2 years).
2. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year). (Biology and public health.)

GEOLOGY DEPARTMENTS.

UNDERGRADUATE COURSES.

Degrees: B. S., B. S. in Geology and Mining, B. S. in Economic Geology.

1. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 and 5 years).
2. State College of Washington (Department of Geology)—B. S. (4 years).
3. University of California (College of Mining)—B. S. in Economic Geology (4 years).

4. University of North Carolina (School of Applied Science)—B. S. in Geology (4 years).
5. University of Washington (College of Mines)—B. S. in Geology and Mining (4 years).

GRADUATE COURSE.

Degree: M. S.

1. Massachusetts Institute of Technology (Graduate Department) M. S. (1 year).

PHYSICS DEPARTMENTS.

UNDERGRADUATE COURSES.

Degrees: B. S., B. S. in Physics, B. S. in General Engineering Physics.

1. Case Schoool of Applied Science (Undergraduate Department)—B. S. in Physics (4 years).
2. Massachusetts Institute of Technology (Undergraduate Department)—B. S. (4 and 5 years).
3. University of Illinois (College of Engineering)—B. S. in General Engineering Physics (4 years).

GRADUATE COURSES.

Degrees: M. S., M. S. in Physics.

1. Case School of Applied Science (Graduate Department)—M. S. in Physics (1 year).
2. Massachusetts Institute of Technology (Graduate Department)—M. S. (1 year).

SCHOOLS (OR DEPARTMENTS OR COLLEGES) OF SOCIAL SCIENCE.

UNDERGRADUATE COURSES.

Degrees: B. S., Ph. B., Certificate.

1. Oregon State Agricultural College (School of Commerce) –B. S. (4 years).
2. Simmons College (Undergraduate Department)—B. S. (4 years); Certificate (short course in social work).
3. State College of Washington (College of Science and Arts)—A. B. (4 years).
4. State University of Iowa (School of Political and Social Science and Commerce).
5. University of Chicago (College of Religious and Social Sciences)—Ph. B. (4 years).
6. University of Minnesota (College of Science, Literature, and the Arts)—B. S. (4 years).

GRADUATE COURSES.

Degrees: M. A., M. A. (or M. S.) in Municipal Administration.

1. University of Michigan (Graduate School)—M. A. or M. S. in Municipal Administration (1 year).
2. University of Minnesota (College of Science, Literature, and the Arts)—M. A. (1 year).
3. Western Reserve University (School of Applied Social Sciences)—M. A. (2 years).

MEDICAL SCIENCE.

DEPARTMENTS (OR COLLEGES OR SCHOOLS OR FACULTIES) OF MEDICINE.

Degrees: M. B., M. D., B. S., A. B. and M. D., B. S. and M. D., Certificate, C. S. (Certified Sanitarian).

1. Columbia University (College of Physicians and Surgeons)—B. S. (2 years), M. D. (5 years).
2. Cornell University (Medical College)—M. D. (4 years).
3. Dartmouth College (Medical School)—(No degree—2 years' work only).
4. George Washington University (Medical School)—M D. (4 years); (Columbian College and Medical School)—B. S. and M. D. (6 years).
5. Georgetown University (School of Medicine)—M. D. (4 years).
6. Harvard University (Medical School)—M. D. (4 years).
7. Howard University (Medical College)—M. D. (4 years).
8. Indiana University (School of Medicine)—M. D. (4 years).
9. Leland Stanford Junior University (Department of Medicine)—M. D. (5 years).
10. New York University (University and Bellevue Hospital Medical College)—M. D. (4 years), M. B. (4 years, combined arts and medicine).
11. Northwestern University (Medical School)—M. D. (5 years).
12. Ohio State University (College of Medicine)—M. D. (4 years).
13. St. Louis University (School of Medicine)—M. D. (4 years).
14. State University of Iowa (College of Medicine)—M. D. (4 years); (College of Homeopathic Medicine)—M. D. (4 years).
15. Tufts College (Medical School)—M. D. (4 years).
16. Tulane University of Louisiana (School of Medicine)—M. D. (4 years); B. S. and M. D. (6 years, combined arts and medicine).
17. University of California (Medical School)—M. D. (5 years).
18. University of Chicago (Rush Medical College)—M. D. (5 years).
19. University of Cincinnati (College of Medicine)—M. D. (4 years), B. S. and M. D. (6 years, combined arts and medicine).
20. University of Illinois (College of Medicine)—A. B. and M. D. (7 or 8 years), B. S. and M. D. (6 years).
21. University of Kansas (School of Medicine)—M. D. (4 years).
22. University of Michigan (Medical School)—M. D. (4 years); (Homeopathic Medical School)—M. D. (4 years).
23. University of Minnesota (Medical School)—B. S. (4 years, combined arts and medicine), M. D. (5 years).
24. University of Missouri (School of Medicine)—Certificate (2 years).
25. University of Nebraska (College of Medicine)—M. D. (4 years).
26. University of North Carolina (School of Medicine)—B. S. (5 years, combined course). No professional degree granted.
27. University of Oregon (School of Medicine)—M. D. (4 years).
28. University of Pennsylvania (School of Medicine)—M. D. (4 years); C. S. (Certified Sanitarian) (1 year).
29. University of Pittsburgh (School of Medicine)—M. D. (4 years), B. S. and M. D. (6 years, combined course).
30. University of Southern California (College of Physicians and Surgeons)—M. D. (4 years).
31. University of Texas (School of Medicine)—M. D. (4 years).
32. University of Virginia (Department of Medicine)—M. D. (4 years).
33. University of Wisconsin (Medical School)—B. S. (4 years, medical science course). No professional degree granted.

34. Vanderbilt University (Medical Department)—M. D. (4 years).
35. Washington University (St. Louis) (Medical School)—M. D. (4 years).
36. Western Reserve University (School of Medicine)—M. D. (4 years); A. B. and M. D. (7 years, combined course).
37. Yale University (School of Medicine)—M. D. (4 years).

GRADUATE COURSES.

Degrees: M. D., M. D. *cum laude*, A. B. and M. D., A. M. in Medicine, Dr. P. H. (or D. P. H.), Graduate in Public Health, M. P. H., C. P. H. (Certificate).

1. Harvard University (Medical School)—D. P. H. (1 year); (School of Public Health)—C. P. H. (Certificate) (1 year).
2. Indiana University (School of Medicine)—M. D. *cum laude* (1 year).
3. Johns Hopkins University (Faculty of Medicine)—M. D. (4 years); (Faculty of Hygiene)—D. P. H. (2 years following M. D.), D. Sc. in Hygiene (3 years).
4. Massachusetts Institute of Technology (School of Public Health)—C. P. H. (Certificate) (1 year).
5. New York University (University and Bellevue Hospital Medical College)—Dr. P. H. (1 year).
6. University of California (Graduate School)—Graduate in Public Health (2 years).
7. University of Cincinnati (College of Medicine)—M. D. *cum laude* (1 year).
8. University of Michigan (Graduate School)—M. S. in Public Health (1 year), D. P. H. (2 years).
9. University of Pennsylvania (School of Hygiene and Public Health)—D. P. H. (1 year).
10. University of Wisconsin (Graduate School)—M. P. H. (1 year), Dr. P. H. (2 years).
11. Western Reserve University (Graduate School)—A. M. in Medicine (5 years).
12. Yale University (Graduate School)—C. P. H. (1 year), Dr. P. H. (2 years).

COLLEGES (OR SCHOOLS OR DEPARTMENTS) OF DENTISTRY.

UNDERGRADUATE COURSES.

Degrees: D. D. S., D. M. D.

1. Columbia University (School of Dentistry)—B. S. (2 years), D. D. S. (4 years).
2. Georgetown University (Dental School)—D. D. S. (4 years).
3. Harvard University (Dental School)—D. M. D. (4 years).
4. Howard University (Dental School)—D. D. S. (4 years).
5. Northwestern University (Dental School)—D. D. S. (4 years).
6. Ohio State University (College of Dentistry)—D. D. S. (4 years).
7. St. Louis University (St. Louis Dental College)—D. D. S. (4 years).
8. State University of Iowa (College of Dentistry)—D. D. S. (4 years).
9. Tufts College (Dental School)—D. M. D. (4 years).
10. Tulane University of Louisiana (School of Dentistry)—D. D. S. (4 years).
11. University of California (College of Dentistry)—D. D. S. (4 years).
12. University of Illinois (College of Dentistry)—D. D. S. (4 years).
13. University of Michigan (College of Dental Surgery)—D. D. S. (4 years).
14. University of Minnesota (College of Dentistry)—D. D. S. (4 and 5 years).

15. University of Nebraska (College of Dentistry)—D. D. S. (4 years).
16. University of Pennsylvania (School of Dentistry)—D. D. S. (4 years).
17. University of Pittsburgh (School of Dentistry)—D. D. S. (4 years).
18. University of Southern California (College of Dentistry)—D. D. S. (4 years).
19. Vanderbilt University (Dentistry Department)—D. D. S. (4 years).
20. Washington University (St. Louis) (Dental School)—D. D. S. (4 years).
21. Western Reserve University (Dental School)—D. D. S. (4 years).

GRADUATE COURSES.

Degrees: M. A., M. S., Ph. D.

1. University of Michigan (College of Dental Surgery)—M. S. (1 year).
2. University of Minnesota (Graduate School)—M. A., M. S., Ph. D.

COLLEGES (OR SCHOOLS OR DEPARTMENTS OR COURSES) OF PHARMACY.

UNDERGRADUATE COURSES.

Degrees: Ph. C., P. D., Ph. G., Phar. B., Phar. D., Phar. Chem. (or Pharmaceutical Chemist), B. S. in Pharmacy (or Phar., or Pharm.), B. S. (or B. Sc.).

1. Alabama Polytechnic Institute (Undergraduate Department)—Ph. G. (2 years); Ph. C. (3 years), B. S. (4 years).
2. Columbia University (College of Pharmacy)—College course, Ph. G. (2 years); University course, Ph. C. (3 years).
3. George Washington University (School of Pharmacy)—B. S. in Phar. (4 years).
4. Howard University (Pharmaceutic College)—Phar. D. (3 years).
5. Ohio State University (College of Pharmacy)—Ph. C. (2 years), B. S. in Phar. (4 years).
6. Oregon State Agricultural College (School of Pharmacy)—Ph. G. (2 years), Ph. C. (3 years), B. S. (4 years).
7. Purdue University (Undergraduate Department)—Pharmaceutical Chemist (2 years), B. S. in Pharmacy (4 years).
8. State College of Washington (School of Pharmacy)—Ph. G. (2 years), Ph. C. (3 years). B. S. (4 years).
9. State University of Iowa (College of Pharmacy)—Ph. G. (2 years), Ph. C. (3 years), B. S. in Pharm. (6 years, combined course).
10. Tulane University of Louisiana (School of Pharmacy)—Ph. G. (2 years), Ph. C. (3 years).
11. University of California (College of Pharmacy)—Ph. G. (2 years), Ph. C. (3 years), Phar. B. (4 years).
12. University of Illinois (School of Pharmacy)—Phar. Chem. (2 years), Ph. G. (4 years).
13. University of Kansas (School of Pharmacy)—Ph. G. (2 years), Ph. C. (3 years).
14. University of Michigan (College of Pharmacy)—Ph. C. (3 years), B. S. in Pharmacy (4 years).
15. University of Minnesota (College of Pharmacy)—Ph. C. (3 years), B. S. in Phm. (4 years).
16. University of Nebraska (College of Pharmacy)—Ph. G. (2 years); Ph. C. (3 years), B. Sc. (4 years).
17. University of North Carolina (School of Pharmacy)—Ph. G. (2 years), P. D. (3 years), Ph. C. (3 years).

18. University of Notre Dame (College of Science)—Ph. G. (2 years), Ph. C. (3 years), B. S. in Phar. (4 years).
19. University of Pittsburgh (School of Pharmacy)—Ph. G. (2 years), Ph. C. (3 years).
20. University of Southern California (College of Pharmacy)—Ph. C. (2 years), Phar. B. (3 years).
21. University of Texas (College of Pharmacy)—Ph. G. (2 years).
22. University of Washington (College of Pharmacy)—Ph. C. (2 years), B. S. (4 years).
23. University of Wisconsin (College of Letters and Science)—Ph. G. (2 years), B. S. in Pharmacy (4 years).
24. Vanderbilt University (Pharmacy Department)—Ph. G. (2 years), B. S. in Pharm. (4 years).
25. Western Reserve University (School of Pharmacy)—Ph. G. (2 years), Ph. C. (3 years).

GRADUATE COURSES.

Degrees: M. S. in Pharm. (or Phm. or Pharmacy), B. S. in Pharmacy, Phar. D., D. Sc. in Phm.

1. Alabama Polytechnic Institute (Graduate Department)—M. S. in Phar. (1 year).
2. Columbia University (College of Pharmacy)—B. S. in Phar. (1 year), Phar. D. (3 years).
3. Tulane University of Louisiana (School of Pharmacy)—Phar. D. (1 year).
4. University of Minnesota (College of Pharmacy)—M. S. in Phm. (1 year), D. Sc. in Phm. (2 years).
5. University of Washington (College of Pharmacy)—M. S. in Pharmacy (1 year).

DEPARTMENTS (OR COLLEGES OR DIVISIONS OR SCHOOLS) OF VETERINARY MEDICINE.

UNDERGRADUATE COURSES.

Degrees: B. S. and D. V. M., B. S. in A. H. and D. V. M., B. S. in Veterinary Science, D. V. M. (or V. M. D.), D. V. S.

1. Agricultural and Mechanical College of Texas (Undergraduate Department)—D. V. M. (4 years).
2. Alabama Polytechnic Institute (Undergraduate Department)—D. V. M. (3 years).
3. Cornell University (New York State Veterinary College)—D. V. M. (3 years).
4. Iowa State College (Division of Veterinary Medicine)—D. V. M. (4 years), B. S. in A. H. and D. V. M. (6 years, combined course), B. S. and D. V. M. (6 years, combined course).
5. Kansas State Agricultural College (Division of Veterinary Medicine)—D. V. M. (4 years); Animal Husbandry and Veterinary Medicine—B. S. in Agriculture (4 years); D. V. M. (6 years).
6. New York University (New York State Veterinary College)— D. V. S. (4 years).
7. Ohio State University (College of Veterinary Medicine)—D. V. M. (4 years).
8. State College of Washington (College of Veterinary Science)—B. S. in Veterinary Science and D. V. M. (4 years).
9. University of Pennsylvania (School of Veterinary Medicine)—V. M. D. (4 years).

COLLEGES (OR SCHOOLS OR INSTITUTES OR DEPARTMENTS) OF LAW.

UNDERGRADUATE COURSES.

Degrees: LL. B., B. C. L., J. B., J. D.,[86] A. B. and LL. B.

1. Catholic University of America (School of Law—Undergraduate Department)—LL. B. (3 years).
2. Columbia University (School of Law)—LL. B. (3 years).
3. Cornell University (College of Law)—LL. B. (3 years).
4. George Washington University (Law School)—LL. B. (3 years).
5. Georgetown University (Law School)—LL. B. (3 years).
6. Harvard University (Law School)—LL. B. (3 years).
7. Howard University (School of Law)—LL. B. (3 years).
8. Indiana University (School of Law)—LL. B. (3 years).
9. Leland Stanford Junior University (Law School)—LL. B. (3 years), J. D. (3 years).
10. Louisiana State University (Law School)—LL. B. (3 years).
11. New York University (School of Law)—LL. B. (3 years), J. D. (3 years).
12. Northwestern University (Law School)—LL. B. (3 or 4 years), J. D. (3 or 4 years).
13. Ohio State University (College of Law)—LL. B. (3 years), J. D. (3 years).
14. St. Louis University (Institute of Law)—LL. B. (3 or 4 years).
15. State University of Iowa (College of Law)—LL. B. (3 years).
16. Tulane University of Louisiana (College of Law)—LL. B. (3 years).
17. University of Arizona (School of Law)—LL. B. (3 years).
18. University of California (Hastings College of the Law)—LL. B. (3 years).
19. University of Chicago (Law School)—LL. B. (3 years).
20. University of Cincinnati (College of Law)—LL. B. (3 years), A. B. and LL. B. (6 years, combined courses).
21. University of Illinois (School of Law)—LL. B. (3 years), J. D. (3 years).
22. University of Kansas (School of Law)—LL. B. (3 years).
23. University of Michigan (Law School)—LL. B. (3 years).
24. University of Minnesota (Law School)—LL. B. (3 years).
25. University of Missouri (School of Law)—LL. B. (3 years).
26. University of Nebraska (College of Law)—LL. B. (3 years).
27. University of North Carolina (School of Law)—LL. B. (3 years), A. B. and LL. B. (6 years, combined arts and legal course).
28. University of Notre Dame (College of Law)—LL. B. (4 years).
29. University of Oregon (School of Law)—LL. B. (3 years), J. D. (3 years).
30. University of Pennsylvania (Law School)—LL. B. (3 years).
31. University of Pittsburgh (School of Law)—LL. B. (3 years; for graduates of the College or School of Economics, 2 years).
32. University of Southern California (College of Law)—LL. B. (3 years), J. D. (3 years).
33. University of Texas (School of Law)—LL. B. (3 years).
34. University of Virginia (Department of Law)—LL. B. (3 years).
35. University of Washington (School of Law)—LL. B. (3 years).
36. University of Wisconsin (Law School)—LL. B. (3½ years).
37. Vanderbilt University (Law Department)—LL. B. (3 years).
38. Washington University (St. Louis) (St. Louis Law School)—LL. B. (3 years).

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[86] Longer preparation is as a rule required for candidacy for this degree than for the LL. B. In most cases a bachelor's degree from a recognized college is required.

39. Western Reserve University (Law School)—LL. B. (3 years).
40. Yale University (School of Law)—LL. B. (3 years), B. C. L. (3 years).

GRADUATE COURSES.

Degrees: LL. M., M. L., LL. D., M. C. L., D. C. L., Jur. D., J. D., S. J. D., Master of Patent Law.

1. Catholic University of America (School of Law—Graduate Department)—LL. M. (1 year), M. C. L. (1 year), J. D. (2 years), D. C. L. (2 years).
2. Columbia University (School of Law)—LL. M. (1 year).
3. George Washington University (Law School)—LL. M. (1 year), Master of Patent Law (1 year).
4. Georgetown University (Law School)—LL. M. (1 year), Master of Patent Law (1 year).
5. Harvard University (Law School)—S. J. D. (1 year).
6. Indiana University (School of Law)—J. D. (3 years).
7. New York University (School of Law)—LL. M. (1 year).
8. Northwestern University (Law School)—LL. M. (1 year), J. D. (1 year).
9. St. Louis University (Institute of Law)—LL. M. (1 year).
10. University of California (Graduate School)—J. D. (2 years).
11. University of Chicago (Law School)—J. D. (2 or 3 years).
12. University of Michigan (Law School)—LL. M. (1 year), J. D. (3 years).
13. University of Nebraska (College of Law)—J. D. (1 to 5 years).
14. University of Notre Dame (College of Law)—LL. M. (1 year), LL. D. (3 years), D. C. L. (3 years).
15. University of Pennsylvania (Law School)—LL. M. (1 year).
16. University of Southern California (College of Law)—LL. M. (1 year).
17. Yale University (School of Law)—M. L. (1 year), Jur. D. (1 year), D. C. L. (2 years).

COLLEGES (OR SCHOOLS OR SEMINARIES OR INSTITUTES) OF THEOLOGY.

UNDERGRADUATE COURSES.

Degrees: B. D., S. T. B., J. C. B., Diploma.

1. Catholic University of America (School of Sacred Sciences)—S. T. B., J. C. B.
2. Harvard University (Divinity School) (Nonsectarian)—S. T. B. (3 years).
3. Howard University (School of Theology) (Interdenominational)—B. D. (3 years), Diploma (3 years).
4. Northwestern University (Garrett Biblical Institute) (Methodist Episcopal)—Diploma.
5. St. Louis University (School of Divinity) (Catholic).
6. Tufts College (Crane Theological Seminary) (Universalist)—B. D. (3 or 5 years).
7. University of Chicago (English Theological Seminary) (Baptist) (4 years' summer work—no degree).
8. University of Southern California (College of Theology) (Methodist)—B. D. (3 years), Diploma (3 years).
9. Vanderbilt University (Biblical Department) (Nonsectarian)—B. D. (3 years), Diploma (3 years).
10. Yale University (School of Religion) (Nonsectarian)—B. D. (3 years).

GRADUATE COURSES.

Degrees: S. T. L., S. T. D., M. S. T. (or S. T. M., J. C. L., J. C. D.), D. B. (or B. D.), Th. D., A. M., Ph. D.

1. Catholic University of America (School of Sacred Sciences)—S. T. L. (2 years), J. C. L. (2 years), S. T. D. (4 years), J. C. D. (4 years).
2. Harvard University (Divinity School)—S. T. M. (1 year, Th. D. (2 years).
3. Northwestern University (Garrett Biblical Institute, Graduate School of Theology)—B. D. (3 years).
4. Oberlin College (Graduate School of Theology)—B. D. (3 years), S. T. M. (1 year after award of D. B.).
5. University of Chicago (Graduate Divinity School)—A. M. (1 year), D. B. (3 years), Ph. D. (4 years).
6. Yale University (Graduate School)—M. A. (1 year), Ph. D. (3 years).

COLLEGES (OR SCHOOLS OR COURSES) OF EDUCATION.

UNDERGRADUATE COURSES.

Degrees: A. B. (or B. A.), A. B. (or B. A.) in Education, A. B. and Bachelor's Diploma in Education, B. S., B. S. in Ed., B. S. in Pedagogy. S. B. (or B. S.) in Education, B. S. and Bachelor's Diploma in Education, B. S. in Agricultural Education, B. S. in Industrial Education, B. S. in Physical Education, Ph. B. in Education, Bachelor of Education, Diploma, Teacher's Certificate, Certificate, Kindergarten Primary Certificate, Manual Arts Certificate, Home Economics and Household Arts Certificate, Graphic and Plastic Arts Certificate, Supervisor's Certificate.

1. Agricultural and Mechanical College of Texas (Undergraduate Department)—B. S. in Industrial Education (4 years), B. S. in Agricultural Education (4 years).
2. Catholic University of America (Department of Education)—A. B. (4 years).
3. Clemson Agricultural College (Undergraduate Department)—B. S. in Industrial Education (4 years).
4. Columbia University (Teachers' College—School of Practical Arts)—A. B. in Education (4 years).
5. George Peabody College for Teachers (College of Education)—B. S. (4 years).
6. George Washington University (Teachers College)—A. B. and Bachelor's Diploma in Education (4 years).
7. Howard University (School of Education)—A. B. in Education (4 years), B. S. in Education (4 years).
8. Indiana University (School of Education)—A. B. (4 years).
9. Johns Hopkins University (College Course for Teachers)—B. S. (4 years), A. B. (4 years).
10. Leland Stanford Junior University (School of Education)—A. B. (4 years).
11. Louisiana State University (Teachers College)—B. A. (4 years), B. S. (4 years).
12. Ohio State University (College of Education)—B. S. in Education (4 years).
13. Oregon State Agricultural College (School of Vocational Education)—B. S. (4 years).
14. Simmons College (Undergraduate Department)—Short Course in Industrial Teaching—Certificate; Education for Store Service—Certificate (1 year).

15. State College of Washington (School of Education)—B. A. in Education (4 years).
16. State University of Iowa (College of Education)—Certificate (4 years).
17. Tulane University of Louisiana (College of Arts and Sciences)—B. A. in Education (4 years); (H. Sophie Newcomb Memorial College)—B. A. (4 years), B. A. in Education (4 years).
18. University of Chicago (School of Education—The College)—Ph. B. in Education (4 years), A. B. in Education (4 years), S. B. in Education (4 years), Kindergarten Primary Certificate (2 years), Manual Arts Certificate (2 years), Home Economics and Household Arts Certificate (2 years), Graphic and Plastic Arts Certificate (2 years), Supervisor's Certificate (1 year).
19. University of Cincinnati (College for Teachers)—B. S. (4 years).
20. University of Illinois (School of Education)—B. S. in Education (4 years), B. S. in Agricultural Education (4 years), B. S. in Industrial Education (4 years), B. S. in Physical Education (4 years).
21. University of Kansas (School of Education)—B. S. in Education (4 years).
22. University of Michigan (College of Literature, Science, and the Arts)—Teacher's Diploma.
23. University of Minnesota (College of Education)—B. S. in Education (4 years).
24. University of Missouri (School of Education)—B. S. in Ed. (4 years), Teacher's Certificate.
25. University of Nebraska (Teachers College)—A. B. or B. Sc. and Teachers' College Diploma (4 years).
26. University of North Carolina (School of Education)—A. B. (4 years).
27. University of Oregon (School of Education)—A. B. (4 years).
28. University of Pennsylvania (School of Education)—B. S. in Education (4 years).
29. University of Pittsburgh (School of Education)—A. B. or B. S. and Bachelor's Diploma (4 years).
30. University of Texas (School of Education)—Course counts toward B. A. in College of Arts.
31. University of Virginia (School of Education)—B. S. in Education (4 years). Teacher's Certificate (2 years).
32. University of Washington (College of Education)—Bachelor of Education (4 years), Diploma.
33. University of Wisconsin (Teachers' Training Course)—B. A. or B. S. (4 years), Certificate.

GRADUATE COURSES.

Degrees: A. M., M. A. in Education, A. M. and Master's Diploma in Education, M. S., M. S. in Education, Pd. M., Pd. D., Ph. D., Ph. D. in Education, Graduate in Education, Graduate Teacher's Diploma, University Teacher's Certificate.

1. Bryn Mawr (Graduate Department of Education)—M. S. in Education (1 year), Ph. D. in Education (3 years), Diploma.
2. Catholic University of America (Graduate Department)—A. M. (1 year), Ph. D. (3 years).
3. Clark University (Graduate) (Department of Pedagogy)—Ph. D.
4. Columbia University (Teachers College—School of Education)—A. M. (1 year); (Teachers College—School of Practical Arts)—M. S. (1 year).
5. George Peabody College for Teachers (Graduate School of Education)—A. M. (1 year), Ph. D. (2 years, minimum).

6. Indiana University (School of Education)—A. M. (1 year), Ph. D. (3 years).
7. Johns Hopkins University (Faculty of Philosophy)—Ph. D. (3 years).
8. Leland Stanford Junior University (Graduate Department)—A. M. (1 year), Ph. D. (3 years).
9. New York University (School of Pedagogy)—Pd. M. (3 years), Pd. D. (5 years).
10. State College of Washington (School of Education)—M. A. in Education (1 year).
11. University of California (School of Education)—Graduate in Education (2 years).
12. University of Chicago (Graduate School of Arts and Literature, and Ogden School of Science)—A. M. (1 year), M. S. (1 year), Ph. D. (3 years).
13. University of Kansas (School of Education) — University Teacher's Diploma.
14. University of Michigan (Graduate School)—M. A. (1 year), Ph. D. (3 years).
15. University of Nebraska (Graduate College)—Graduate Teacher's Diploma; (Teachers College)—University Teacher's Certificate (3 years).
16. University of Pennsylvania (Graduate School)—A. M. (1 year), Ph. D. (3 years).
17. University of Washington (College of Education)—M. A. in Education (1 year), M. S. in Education (1 year).

SECTION V.

TABLE OF DEGREES MENTIONED IN THIS BULLETIN, AND THE ABBREVIATIONS USED TO DESIGNATE THEM.

BACHELOR'S DEGREES.

A. B. or B. A.	Bachelor of Arts.
B. Agr.	Bachelor of Agriculture.
B. Arch.	Bachelor of Architecture.
B. A. in Ed.	Bachelor of Arts in Education.
B. B. A.	Bachelor of Business Administration.
B. Chem.	Bachelor of Chemistry.
B. C. E.	Bachelor of Chemical Engineering.
B. C. S.	Bachelor of Commercial Science.
B. Cr. E.	Bachelor of Ceramics Engineering.
B. D. or D. B.	Bachelor of Divinity.
B. Des.	Bachelor of Design.
B. E.	Bachelor of Engineering.
B. E. E.	Bachelor of Electrical Engineering.
B. Ed.	Bachelor of Education.
B. F. A.	Bachelor of Fine Arts.
B. Eng.	Bachelor of Engineering.
B. E. M.	Bachelor of Mining Engineering.
B. M. E.	Bachelor of Mechanical Engineering.
B. J.	Bachelor of Journalism.
B. L., B. Litt., or Litt. B.	Bachelor of Literature.
B. L. Sc.	Bachelor of Library Science.
B. Mus. or Mus. B.	Bachelor of Music.
B. Ped.	Bachelor of Pedagogy.
B. S., B. Sc., or S. B.	Bachelor of Science.
B. Sc. Agr.	Bachelor of Scientific Agriculture.
B. S. in Agr.	Bachelor of Science in Agriculture.
B. S. in Agricultural Chemistry.	
B. S. in Biochemistry.	
B. S. in Agr. Ed.	Bachelor of Science in Agricultural Education.
B. S. in Agr. Eng.	Bachelor of Science in Agricultural Engineering.
B. S. in Agron.	Bachelor of Science in Agronomy.
B. S. in Animal Husbandry.	
B. S. in Arch.	Bachelor of Science in Architecture.
B. S. in Arch. Eng.	Bachelor of Science in Architectural Engineering.
B. S. in Biol.	Bachelor of Science in Biology.
B. S. in Cer.	Bachelor of Science in Ceramics.

B. S. in Chem	Bachelor of Science in Chemistry.
B. S. in C. E	Bachelor of Science in Civil Engineering.
B. S. in Coal Mining Engineering.	
B. S. in Com	Bachelor of Science in Commerce.
B. S. in Dairying.	
B. S. in Econ	Bachelor of Science in Economics.
B. S. in Ed	Bachelor of Science in Education.
B. S. in El. Eng	Bachelor of Science in Electrical Engineering.
B. S. in Farm Management.	
B. S. in Fire Protection Engineering.	
B. S. in Floriculture.	
B. S. in For	Bachelor of Science in Forestry.
B. S. in General Engineering Physics.	
B. S. in Geology and Mining.	
B. S. in H. Econ	Bachelor of Science in Home Economics.
B. S. in Horticulture.	
B. S. in Household Science.	
B. S. in Ind. Arts	Bachelor of Science in Industrial Arts.
B. S. in Industrial Journalism.	
B. S. in Industrial Science.	
B. S. in Landscape Gardening.	
B. S. in Law.	
B. S. in Logging Engineering.	
B. S. in Mech. Eng	Bachelor of Science in Mechanical Engineering.
B. S. in Med	Bachelor of Science in Medicine.
B. S. in Met. Eng	Bachelor of Science in Metallurgical Engineering.
B. S. in Min. E	Bachelor of Science in Mining Engineering.
B. S. in Mun. and San. Eng	Bachelor of Science in Municipal and Sanitary Engineering.
B. S. in Ped	Bachelor of Science in Pedagogy.
B. S. in Phar	Bachelor of Science in Pharmacy.
B. S. in Railway Civil Engineering.	
B. S. in Railway Electrical Engineering.	
B. S. in Railway Engineering.	
B. S. in Railway Mechanical Engineering.	
B. S. in Structual Engineering.	
B. S. in S. T	Bachelor of Science in Sugar Technology.
B. S. in Textile Industry.	
B. S. in Trades and Industries.	
D. V. M. or V. M. D	Doctor of Veterinary Medicine.
Graduate in Music.	
I. E	Industrial Engineer.
J. C. B	Bachelor in Canon Law.
L. H. B	Bachelor of Literature.
LL. B	Bachelor of Laws.
Pet. E	Petroleum Engineer.
Ph. B	Bachelor of Philosophy.

Ph. B. in Com	Bachelor of Philosophy in Commerce.
Ph. B. in Foreign Commerce.	
Ph. B. in Education.	
Ph. B. in Jour	Bachelor of Philosophy in Journalism.
Ph. C	Pharmaceutical Chemist.
Ph. G	Graduate in Pharmacy.
Phar. B	Bachelor of Pharmacy.
S. T. B	Bachelor of Sacred Theology.

HIGHER DEGREES.

A. E. or Agr. E	Agricultural Engineer.
Ae. E	Aeronautical Engineer.
A. M. or M. A	Master of Arts.
Arch	Architect.
Arch. Eng	Architectural Engineer.
Cer. Eng. or Cr. E	Ceramics Engineer.
Ch. E. or Chem. Eng	Chemical Engineer.
C. E	Civil Engineer.
C. P. H	Certificate in Public Health.
C. S	Certified Sanitarian.
D. C. L	Doctor of Civil Law.
D. D. S	Doctor of Dental Surgery.
D. D. Sc	Doctor of Dental Science.
D. Eng. or Eng. D	Doctor of Engineering.
D. M. D	Doctor of Dental Medicine.
D. Sc., S. D., or Sc. D	Doctor of Science.
D. Sc. in Hygiene.	
D. Sc. in Phm	Doctor of Science in Pharmacy.
D. P. H. or Dr. P. H	Doctor of Public Health.
E. A	Engineering Administrator.
E. E	Electrical Engineer.
E. M	Engineer of Mines.
El. Met	Electrometallurgist.
Fire Protection Engineer.	
Graduate in Architecture.	
Graduate in Education.	
Graduate in Public Health.	
J. C. D	Doctor in Canon Law.
J. C. L	Licentiate in Canon Law.
J. D. or Jur. D	Doctor of Law.
J. S. D. or S. J. D	Doctor of Science in Law.
L. H. D	Doctor of Literature.
LL. D	Doctor of Laws.
LL. M	Master of Laws.
M. A. in Education.	
M. A. in Municipal Administration.	
Mar. E	Marine Engineer.
M. Arch	Master of Architecture.
M. B. A	Master in Business Administration.
M. C. E	Master of Civil Engineering.
M. C. L	Master of Civil Law.
M. C. S	Master of Commercial Science.
M. D	Doctor of Medicine.

M. E. or Mech. E	Mechanical Engineer.
M. E. E	Master of Electrical Engineering.
Met. E	Metallurgical Engineer.
M. F	Master of Forestry.
M. L	Master of Literature.
M. L. A	Master of Landscape Architecture.
M. L. D	Master of Landscape Design.
M. M. E	Master of Mechanical Engineering.
M. P. L	Master of Patent Law.
M. Ped	Master of Pedagogy.
M. P. H	Master of Public Health.
M. S. A	Master of Scientific Agriculture.
M. S., M. Sc., or S. M	Master of Science.
M. S. or M. Sc. in Agr	Master of Science in Agriculture.
M. S. or S. M. in Agricultural Engineering.	
M. S. or S. M. in Civil Engineering.	
M. S. or S. M. in Electrical Engineering.	
M. S. or S. M. in Mechanical Engineering.	
M. S. in Arch	Master of Science in Architecture.
M. S. or M. Sc. in Eng	Master of Science in Engineering.
M. S. in Engineering Administration.	
M. S. in For	Master of Science in Forestry.
M. S. in Industrial Chemistry.	
M. S. F	Master of Scientific Forestry.
M. S. in Min. E	Master of Science in Mining Engineering.
M. S. in Municipal Administration.	
M. S. in Ph. M	Master of Science in Pharmacy.
M. S. or M. Sc. in Public Health.	
M. S. T. or S. T. M	Master of Sacred Theology.
Nav. Arch	Naval Architect.
N. E	Naval Engineer.
Ph. C	Pharmaceutical Chemist.
Pd. D	Doctor of Pedagogy.
Pd. M	Master of Pedagogy.
Ph. D	Doctor of Philosophy.
Phar. D	Doctor of Pharmacy.
Ph. M	Master of Philosophy.
Phm. D	Doctor of Pharmacy.
Phm. M	Master of Pharmacy.
S. J. D	Doctor of Law.
S. M. in Sanitary Engineering.	
S. T. D	Doctor of Sacred Theology.
S. T. L	Licentiate in Sacred Theology.
Th. D	Doctor of Theology.

SECTION VI.

ORGANIZATION AND OFFERINGS OF UNIVERSITIES AND COLLEGES.

It would obviously be impossible in the limits set for such a presentation as that contained in this bulletin to describe, however briefly, all the sound and standard institutions at which the foreign student might profitably seek general or professional training. Selection has been made of those to which foreign students have already gone in considerable numbers and of a few others which by reason of particular and individual offerings may appropriately be brought to the attention of citizens of other countries.

There are many other institutions of equally high rank which have not been included because through the accident of location they have not yet drawn many foreign students or because they belong to a type of college or university already represented among the institutions described. Foreign students interested in other institutions than those mentioned in this section are urged to correspond with the Bureau of Education, which will furnish full and impartial information.

ALABAMA POLYTECHNIC INSTITUTE, Auburn, Ala., a town of 2,400 inhabitants. Founded, 1872; a "land-grant" institution; coeducational.

Undergraduate courses.

Admission: 14 units; 7½ prescribed—3½ mathematics, 3 English, 1 history.

Degrees:

B. S.—General courses of four years, as follows:

In College of Engineering, Mines, and Architecture.—Civil engineering; electrical engineering; mechanical engineering; mining engineering; architectural engineering; chemical engineering; chemistry and metallurgy.

In College of Agricultural Sciences.—Agronomy; horticulture; animal husbandry; agricultural chemistry; botany; agricultural education.

D. V. M.—Four-year course in veterinary medicine.

B. S.—Four-year course in the department of pharmacy.

Ph. C.—Three-year course in the department of pharmacy.

Ph. G.—Two-year course in pharmacy; for admission to this course evidence of one year of high-school work is required.

Graduate courses.

Admission: Bachelor's degree from a recognized college.

Degrees:

M. S.—One year postgraduate study; thesis.

M. S. in Pharmacy.—One year of postgraduate study in the departments of chemistry and pharmacy.

C. E., E. E., M. E., Ch. E., E. M.—One year of postgraduate study; thesis. These degrees are also conferred upon graduates of the institute who have had at least four years' professional experience, including work in a responsible position, and who present a thesis.

Expenses:

Tuition (free to residents of Alabama)	$20
Board and room per month	21–25
Total annual expense	350

Faculty, 66.

Students, 792, of whom 3 are from foreign countries, as follows: Cuba, 1; Brazil, 1; Mexico, 1.

Of special interest to foreign students.—In the last year of the course in agriculture, instruction is provided in the cultivation and classing of cotton, in the growth of other southern crops, such as sugar cane, tobacco, and rice, and in the construction and operation of farm machinery.

In connection with the work in electrical engineering, a one-year course in wireless telegraphy is offered.

A well-equipped laboratory and good clinical facilities make possible the emphasis placed upon practical work in the college of veterinary medicine and surgery.

UNIVERSITY OF ARIZONA, Tucson, Ariz., a city of 20,292 inhabitants, on the main line of the Southern Pacific Railway and the El Paso & Southwestern System. Founded, 1885; a "land-grant" institution; coeducational.

Admission: 15 units. 9½ prescribed—3 English, 2½ mathematics, 1 history, 1 science, 2 foreign language.

Undergraduate courses—four years:	Degrees.
General	A. B. and B. S.
Agriculture	B. S. in Agriculture.
Chemistry	B. S. in Chemistry.
Civil engineering	B. S. in Civil Engineering.
Commerce	B. S. in Commerce.
Electrical engineering	B. S. in Electrical Engineering.
Home economics	B. S. in Home Economics.
Industrial arts	B. S. in Industrial Arts.
Law	LL. B.
Mechanical engineering	B. S. in Mechanical Engineering.
Mining and metallurgy	B. S. in Mining. Engineering, and Metallurgy.

Graduate courses:

Admission: Bachelor's degree from a recognized college.

Degrees: M. S. and A. M.—One year of postgraduate study; thesis. A student who has received the B. S. in Mining, Engineering, and Metallurgy may attain the degree of Engineer of Mines by one year of postgraduate study.

J. D.—Completion of 78 semester units, if student holds a bachelor's degree from any recognized college.

Expenses:

Tuition (free for residents of Arizona) for nonresidents of Arizona	$30
Incidental fee	10
Board, per month	20
Room (college dormitory, per year)	25
Total annual expense	316

Faculty, 65.

Students, 695, of whom 5 are from foreign countries, as follows: India, 1; China, 2; Canada, 1; Mexico, 1.

Of special interest to foreign students.—On account of the great diversity of its rock formation and ore deposits, southern Arizona offers a good field for work in geology.

Before entering the senior year in mining engineering all students must have spent at least six weeks in practical mining and metallurgical work.

The department of agriculture lays special emphasis upon phases of the subject of interest to people in a dry climate like that of Arizona. Mention may be made of courses in farm and horticultural crops, plant breeding, dry farming, soil physics and fertility, citrus and small fruits, and farm management.

Students from Latin American countries are exempt from tuition fees.

LELAND STANFORD JUNIOR UNIVERSITY, Stanford University, Calif., 30 miles southeast of San Francisco, a city of 506,676 inhabitants. Founded, 1885; coeducational.

Undergraduate department:

Admission: Secondary school record showing completion of at least 15 units.

Degree: A. B.—Completion of 180 (quarter) units and recommendation of department faculty, regardless of time spent; 45 units a normal year's work.

Graduate department:

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M.—One year of postgraduate study; thesis.

Engineer (Civil, Mechanical, Electrical, Chemical, Mining)—One year of postgraduate work in department of applied science; thesis.

Ph. D.—Three years' postgraduate study; thesis.

Department of Medicine. (Five quarters of medical work done at Stanford University and seven quarters and interne year at San Francisco.)

Admission: Three years' collegiate work, including English, physics, chemistry, biology, and a knowledge of French or German.

Degree: M. D.—Four-year course of study and one year of practical (interne) work.

Law School:

Admission: Two years' collegiate work.

Degrees:

LL. B.—Three-year course.

J. D.—Three-year course for those who enter with a bachelor's degree. (Combined six-year curriculum, three years' collegiate work and one year law leading to A. B.; two additional years of law leading to J. D.)

Expenses:

Tuition (free except as indicated below). An incidental fee of $20 per quarter required of undergraduates; graduate students, $3 per quarter.

Law Department, per quarter	$35
Medical Department, per quarter	50
Board and room (at university), per month	32–37
Board and room (outside university), per month	30–40
Annual expense (exclusive of tuition in law and medicine)	500–600

Faculty, 270.

Students, 2,053, of whom 66 are from foreign countries.

Of special interest to foreign students.—The medical course requires a fifth year of practical work as a prerequisite for the degree, for which San Francisco provides excellent clinical and hospital facilities. Ten internes are appointed annually at the Lane Hospital.

The Law School offers courses of high grade.

Special mention should also be made of the work in geology, biology (including the summer courses at the marine biological laboratory), mechanical engineering, chemistry, history, economics, and education.

UNIVERSITY OF CALIFORNIA, Berkeley, Calif., a city of 56,036 inhabitants, 35 minutes by train from San Francisco. Founded, 1868; a "land-grant" institution; coeducational.

Undergraduate departments, four-year courses unless otherwise stated.

Admission:

I. Colleges of Letters and Science, and Commerce—45 units;[87] 30 prescribed—6 English, 6 mathematics, 3 history, 3 laboratory science, 6 foreign languages, 6 additional foreign languages, additional laboratory science, or advanced mathematics in any combination.

II. College of Agriculture—45 units; 27 prescribed—6 English, 6 mathematics, 6 foreign languages, 6 sciences (physics and chemistry), 3 history.

III. Four-year courses in Colleges of Mechanics, Mining, Civil Engineering, and Chemistry—45 units; all prescribed—6 English, 12 mathematics, 3 history, 6 science (physics and chemistry), 6 drawing, 6 foreign languages, 6 additional foreign languages or advanced English.

Degrees:

- College of Letters and Science—A. B.
- Colleges of applied science—
  - College of Commerce—B. S.
  - College of Agriculture—B. S.
  - College of Mechanics (mechanical engineering and electrical engineering)—B. S.
  - College of Mining (mining, metallurgy, economic geology, petroleum engineering)—B. S.
  - College of Civil Engineering (railroad engineering, sanitary engineering, irrigation engineering)—B. S.
  - College of Chemistry—B. S.

Undergraduate courses are offered in architecture, education, and jurisprudence. Students in these are also classified in the College of Letters and Science, subject to admission requirements, and receive the degree of A. B.

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[87] Three units in the University of California are the equivalent of one standard college entrance unit.

Graduate School:
  Admission: Bachelor's degree from a recognized college.
  Degrees:
    M. A., M. S.—One year of postgraduate study; thesis.
    J. D.—Two years of postgraduate study; thesis.
    Graduate in Architecture—Two years of postgraduate study; thesis.
    Graduate in Public Health—Two years of postgraduate study.
    Graduate in Education—Two years of postgraduate study.
    Ph. D.—At least two years of postgraduate study; thesis.
    M. E., E. M., E. E., Metallurgical E.—These degrees are conferred upon graduates of engineering colleges, who—at least three years after receiving the bachelor's degree, one of which must have been spent in professional work—successfully pass an examination in prescribed subjects and present a thesis.
    C. E.—At least three years of postgraduate study and thesis.
    The engineering degrees will also be conferred upon those holding bachelor's degrees from the University of California, who, at least 10 years after graduation, in addition to evidence of exceptionally successful professional work, present a satisfactory thesis.

Hastings College of Law (San Francisco):
  Admission: Two years' collegiate work.
  Degree: LL. B.—Three-year course.

Medical School:
  Admission: Two years' collegiate work.
  Degree: M. D.—Five-year course. The first year and a half are spent at Berkeley and the last three and a half years at San Francisco. Graduate instruction only is offered at the Los Angeles medical department.

College of Pharmacy (San Francisco):
  Admission:
    For degree Ph. G.—Graduation from an approved high school, or two years' work in a high school.
    For degree Ph. C.—Graduation from an approved high-school course of four years.
    For degree Phar. B.—Graduation from an approved high-school course of four years.
  Degrees:
    Ph. G.—Two-year course; thesis.
    Ph. C.—Three-year course; thesis.
    Phar. B.—Four-year course; thesis.

College of Dentistry (San Francisco):
  Admission: Satisfactory completion of four-year high-school course, including physics or chemistry.
  Degree: D. D. S.—Four-year course.

Miscellaneous:
  Lick Astronomical Observatory, at Mount Hamilton.
  Scripps Institution for Biological Research, at La Jolla.
  California School of Fine Arts, at San Francisco.
  George Williams Hooper Foundation for Medical Research, at San Francisco.
  University Farm School, at Davis.
  Graduate School of Tropical Agriculture, at Riverside.
  University Extension Division.

Expenses:

Tuition for nonresidents of California, except in medical school and colleges of dentistry and pharmacy	$20
Tuition for all students in medical school	150
Tuition for all students in college of dentistry	150
Tuition for all students in college of pharmacy	100
Board and lodging, per month	30–45
Total annual expense in academic departments need not exceed	500

Faculty, 600.

Students, 9,576, of whom about 274 are from foreign countries, as follows: British Isles, 5; Canada, 25; Australia, 4; South Africa, 2; India, 12; France, 3; Italy, 2; Russia, 14; Germany, 6; Poland, 2; Holland, 2; Sweden, 1; Greece, 7; Bulgaria, 1; Turkey, 1; Syria, 1; Palestine, 2; Argentina, 1; Chile, 6; Colombia, 1; Costa Rico, 1; Mexico, 4; Panama, 1; Peru, 1; San Salvador, 2; Japan, 68; Korea, 4; Philippines, 16; Siam, 1; Java, 3; China, 75.

Of special interest to foreign students.—Well-equipped laboratories provide excellent facilities for work in mining, electrical, and civil engineering. In the latter division courses are offered in irrigation, including irrigation institutions and economics, engineering design, water supply, agricultural hydraulics, and drainage, with graduate work in design, and the management and operation of engineering systems.

The location of the university makes it possible to offer strong courses in the college of agriculture in such special fields as viticulture, citriculture, and the growth of semitropical fruits. Laboratories are maintained in these branches, and the citrus experiment station provides for special study and work with the citrus fruits.

The work in education has in view the professional training of three classes—those preparing to teach in secondary schools and colleges, those preparing to engage in school administration work, and graduates of normal schools who are making further preparation for teaching in elementary schools.

The college of dentistry and the schools of jurisprudence and medicine are of high rank.

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif., a city of 576,673 inhabitants. Founded, 1880; coeducational.

College of Liberal Arts.
  Undergraduate department.
    Admission: 15 units. For A. B. course, 8 prescribed—2 English, 2 foreign language, 1 science, 2 mathematics, 1 history. For B. S. course, 13 prescribed—in addition to those above, 1 science, 2 mathematics, 2 drawing.
  Degrees:
    A. B.—Four-year course.
    B. S.—Four-year course in civil, electrical, or mechanical engineering.
    The university also offers the first two years of a four-year course in mining and chemical engineering.
Graduate department:
  Admission: Bachelor's degree from a recognized college.
  Degree: A. M.—One year of postgraduate study; thesis.
College of Physicians and Surgeons.
  Admission: Two years collegiate work, including physics, biology, chemistry, and German or French.
  Degree: M. D.—Four-year course.

College of Law.

Admission: Graduation from an approved high school.

Degrees:

LL. B.—Three-year course.

J. D.—Three-year course, for those holding A. B. degree.

LL. M.—One-year course after LL. B. or J. D.; thesis.

College of Dentistry.

Admission: Graduation from an approved high school.

Degree: D. D. S.—Four-year course.

College of Theology (Methodist).

Admission: Bachelor's degree from a recognized college.

Degree: B. D.—Three-year course. A three-year course leading to a diploma is also open to students with only two years of collegiate work.

College of Pharmacy.

Admission: Two years of high-school work.

Degrees:

Ph. C.—Two-year course.

Phar. B.—One-year course after Ph. C.; thesis. (This degree is granted to graduates of high schools only.)

College of Fine Arts.

Admission: 15 units, as in college of liberal arts.

Degree: B. Fine Arts.—Four-year course; three-year courses are offered leading to a diploma.

Miscellaneous.

High School (model training school).

College of Music.

College of Oratory.

Expenses:

Tuition—

College of liberal arts and college of law	$100
College of fine arts	95
College of pharmacy	100
College of medicine, and college of dentistry	200
Free in theological school.	
Board and room, per week	8–15

Faculty, 267.

Students. 3,800, of whom 47 are from foreign countries, as follows: Japan, 18; Armenia, 1; Italy, 4; Germany, 3; Korea, 1; Greece, 2; Mexico, 6; Hawaii, 2; China, 1; Canada, 3; France, 2; India, 1; England, 2.

Of special interest to foreign students.—The Oriental Department; the College of Dentistry. The comparative nearness of the University of Southern California to South America and the countries of Central America should interest students from those localities.

COLORADO SCHOOL OF MINES, Golden, Colo., a town of 3,000 inhabitants, 13 miles east of Denver. Founded, 1870.

Admission: 15 units; 10 prescribed—3 mathematics, 3 English, 2 history, 1 chemistry, 1 physics.

Degrees:

E. M.—Four-year undergraduate course; thesis.

M. S.—One-year postgraduate study after E. M.; thesis.

Expenses:

Tuition (free to residents of Colorado) for nonresidents	$150
Board, per week	5–7
Room, per month	8–12
Total annual expense need not exceed	500–600

Faculty, 18.

Students, 278, of whom 31 are from foreign countries, as follows: China, 16; Chile, 5; Korea, 1; Mexico, 4; Bolivia, 1; Brazil, 1; Philippines, 3.

Of special interest to foreign students.—The course includes mining, metallurgy, mechanical, electrical, and civil engineering, geology and mineralogy, and mining law. The school is well equipped with laboratories, and since it is situated in one of the country's greatest mining centers, within reach of an unusually large number and variety of mines and metallurgical enterprises, it offers exceptional opportunities for students in this particular field.

YALE UNIVERSITY, New Haven, Conn., a city of 162,537 inhabitants. Founded, 1701.

Yale College and Sheffield Scientific School (undergraduate).

Degrees:

B. A.—Four-year course (College).
Ph. B.—Four-year course (College).
B. S.—Four-year course (Sheffield Scientific School).

Admission:

Required of *all* candidates, English, elementary algebra, plane geometry, and either French, German, or Spanish.

Additional *prescribed* subjects:

For B. A. candidates—Latin (5 examinations).
For B. S. or Ph. B. candidates—1 history, 1 science, and 1 *additional* foreign language.
Candidates must also secure 3 credits from additional *elective* subjects.

Graduate School. Admission: Bachelor's degree from a recognized college.

Degrees:

M. A. (minimum requirement).—One year of graduate study; essay.
M. S.—Two years of graduate study; thesis.
Ph. D. (minimum requirement).—Three years of graduate study; thesis.
C. P. H. (minimum requirement).—One year graduate study; thesis.
Dr. P. H. (minimum requirement).—Two years' graduate study; thesis.
Women are eligible for all graduate degrees.

Higher engineering degrees:

C. E.—Five-year course; thesis.
M. E.—Five-year course; thesis.
E. M.—Five-year course; thesis.
Met. E.—Five-year course; thesis.
E. E.—Five-year course; thesis.
Chem. E.—Five-year course; thesis.

Courses of study in the Graduate School are offered in the following divisions:

(*a*) Language, Literature, and the Fine Arts: Classical philology and archaeology, Indo-Iranian philology, comparative philology, and linguistics; Semitic and Biblical languages, literature, and history; Romance languages and literatures; Germanic languages and literatures; English language and literature; fine arts—history and criticism.

(*b*) Social and Political Science, History, Philosophy, Psychology, and Education.

(*c*) Mathematics and the Physical and Natural Sciences: Mathematics, physics, chemistry, botany, zoology and comparative anatomy, physiology, physiological chemistry, pathology, pharmacology and experimental medicine, bacteriology and public health, the geological sciences.

(*d*) Engineering: Civil, electrical, mechanical, mining and metallurgy.

School of the Fine Arts.

Three-year course in drawing, painting, and sculpture. B. F. A. is conferred upon students of special ability who have spent at least two years in professional work (one year may be spent in advanced study in the Yale School of the Fine Arts) after completing a three-year course, and who present a thesis and an original work.

Four-year course in architecture. B. F. A. is conferred on satisfactory completion of the four-year course. The work presented by students in this department may consist of selections from the work done during the senior year in the school. In addition a thesis must be presented.

School of Music.

Three-year undergraduate course. A certificate of proficiency in the theory of music is given after this course.

Mus. B. is conferred upon students of special ability who have spent at least two years in graduate study after receiving the certificate. An original work in one of the larger forms must be submitted as a thesis.

School of Forestry.

Admission: Bachelor's degree from a recognized college, or, in certain cases, three years of college work., M. F.—Two-years' course. Students holding a degree in forestry from an institution of high standing may receive the master's degree at the end of one year.

Divinity School.

Admission: Bachelor's degree from a recognized college, or its full equivalent.

Degrees: B. D.—Three-year course. Students may also enroll in the graduate school as candidates for M. A. and Ph. D.

School of Medicine.

Admission: Minimum general requirement: Two years' collegiate work, which must have included certain specified preparatory subjects in science .

Degree: M. D.—Four-year course; thesis.

School of Law.

Admission: As candidate for a degree, bachelor's degree from a recognized college (except for Yale College seniors). As special student not candidate for a degree, two years' collegiate work.

Degrees:

- LL. B.—Three-year course.
- B. C. L.—Three-year course; an equivalent amount of work to that for LL. B. For B. C. L., courses in Roman law are prescribed, but not for LL. B.
- M. L.—One year's study for graduates of recognized law schools; thesis.
- Jur. D.—One year's study for those holding a bachelor's degree and who are graduates of recognized law schools; thesis.
- D. C. L.—Two years' postgraduate study, and in addition to requirements for admission to Jur. D., preliminary examination in Roman law and history, Latin, and either French or German; thesis.

Expenses:

Yearly tuition—

Yale College	$240
Sheffield Scientific School	240
School of the Fine Arts—	
In departments of drawing, painting, and sculpture	90
In department of architecture	180

Expenses—Continued.

Yearly tuition—Continued.

School of music	$50–$200
School of medicine	200
School of law	150
School of forestry, junior year	150
School of forestry, senior year	125
Graduate school	125

Board $6 a week and upward.

Room $2 a week and upward.

Total annual expense, $400 to $1,000, which may be reduced by scholarship aid in the case of students of proven capacity and character. Special efforts are made to assist students of limited means to secure remunerative employment and reduced expenses.

Faculty, 427.

Students, 2,403, of whom 52 are from foreign countries, as follows: Africa, 4; Asia Minor, 3; Canada, 5; China, 16; Europe, 10; India, 1; Japan, 6; Philippines, 1; Siam, 1; South and Central America, 5.

Of special interest to foreign students.—Yale College should prove attractive to foreign students desiring strong undergraduate courses. It includes on its teaching staff many men of the highest reputation and is excellently equipped in the matter of libraries, laboratories, and museums.

Sheffield Scientific School offers thorough courses in the mathematical, physical, and natural sciences. Modern laboratories provide ample facilities for experimental, advanced work, and research, not only in natural science, but also in mechanical, electrical, mining, civil, metallurgical, and chemical engineering.

The School of Forestry, founded in 1900, is strictly a graduate school, and offers thorough training in all branches of forestry. Special endowments provide for the departments of silviculture, lumbering, and forest management. In addition to the usual classroom and laboratory subjects, a large part of each student's time is spent in practical field work, for which the school has at its disposal a tract of 1,000 acres at Milford, Pa.; the forests of the New Haven Water Co., at New Haven, aggregating 9,000 acres; the school forest at Keene, N. H.; and localities in the Adirondack Mountains of New York and in the Southern States. The courses in tropical forestry are of especial interest to foreign students, and several students from South American countries have been authorized by their governments to attend the School of Forestry for this reason.

The Graduate School is excellently equipped and offers courses leading to advanced degrees in all departments.

Among those departments which are especially noteworthy, either on account of the eminence of the professors connected with them or the scope of the courses, may be mentioned history (including Latin-American and the history of Japanese civilization), economics, law, forestry, geology, English, comparative philology, art, music, religion, medicine, the classics, chemistry, physiology, and physics.

CATHOLIC UNIVERSITY OF AMERICA, Washington, D. C., a city of 437,571 inhabitants, the capital of the country. Founded, 1887.

School of Philosophy.

Undergraduate department.

Admission: Graduation from an approved secondary school, with evidence of work completed in English, history, Latin, Greek, French, or German, mathematics, two sciences.

Degrees: A. B., Ph. B.—Four-year course.

- School of Philosophy—Continued.
  - **Graduate department.**
    - Admission: Bachelor's degree from a recognized college.
    - Degrees:
      - Ph. M.—Two years' postgraduate study; thesis.
      - Ph. D.—Three years' postgraduate study; thesis.
- **School of Letters.**
  - Undergraduate department.
    - Admission: Graduation from an approved high school, with evidence of completion of required work in English, one history, mathematics, Latin, and either A or B.
      - A—Greek, elementary French or German.
      - B—One only of the following:
        - (*a*) Advanced French and German.
        - (*b*) Advanced French or advanced German with physics or chemistry.
    - Degrees: A. B., L. H. B.—Four-year courses.
  - Graduate department.
    - Admission: Bachelor's degree from a recognized college.
    - Degrees:
      - A. M.—One year of postgraduate study; thesis.
      - L. H. M.—Two years of postgraduate study; thesis.
      - Ph. D.—Three years of postgraduate study; thesis.
      - L. H. D.—As for Ph. D.
- **School of Sciences.**
  - **Undergraduate department.**
    - Admission: As in the School of Philosophy.
    - Courses, 4 years:

Courses, 4 years:	Degree.
General	B. S. and A. B.
Civil engineering	B. S. in C. E.
Electrical engineering	B. S. in E. E.
Chemical engineering	B. S. in Chem. E.
Mechanical engineering	B. S. in M. E.
Architecture	B. S. in Arch.
Architectural engineering	B. S. in Arch. E.

  - **Graduate department.**
    - Admission: Bachelor's degree from a recognized college.
    - Degrees:
      - A. M.—One year of postgraduate study; thesis.
      - M. S., E. E., C. E., M. E.—Two years of postgraduate study; thesis.
      - Sc. D., Ph. D.—Three years of postgraduate study; thesis.
- **Department of Education.** Degrees: Usual degrees in arts and philosophy.
- **School of Sacred Sciences.**
  - Admission: Completion of a two-year course in philosophy and a three-year course in theology in a Catholic theological seminary.
  - **Degrees:**
    - S. T. B.—Conferred after an examination based on previous theological courses.
    - J. C. B.—Conferred after an examination based on previous seminary courses, including at least one year of canon law.
    - S. T. L. or J. C. L.—Two years of postgraduate study; thesis.
    - S. T. D. or J. C. D.—Four years of postgraduate study; thesis.

School of Law.
Undergraduate department.
Admission: Graduation from an approved secondary school.
Degree: LL. B.—Three-year course.
Graduate department.
Admission: Bachelor's degree from a recognized college and LL. B. from the University Law School or from some law school of recognized standing.
Degrees:
LL. M., M. C. L.—One year of postgraduate study; thesis.
J. D.—Two years of postgraduate study after LL. M.; thesis.
D. C. L.—Two years of postgraduate study after M. C. L.; thesis.

Expenses:

Tuition (except in school of sacred sciences)	$150
Tuition in school of sacred sciences	325
Board (at university), per month	30
Room (at university), $8.50 to $20 a month.	
Total annual expense	500

Faculty, 83.
Students, 336, of whom 16 are from foreign countries, as follows: Canada, 5; Mexico, 2; Nicaragua, 1; Peru, 1; New Brunswick, 1; Nova Scotia, 5; Porto Rico, 1.

Trinity College (affiliated with the Catholic University). Founded, 1897; a Catholic institution for the education of women.
Undergraduate department.
Admission: 15½ units; 13½ prescribed—3 English, 1 history, 2½ mathematics, 4 Latin, 3 Greek, French, or German.
Degrees: A. B., B. S., or B. L.—Four-year course.
Graduate department.
Admission: Bachelor's degree from a recognized college.
Degrees: A. M., M. S.—One year of postgraduate study; thesis. Graduate work is offered only in those departments in which professors from the Catholic University teach, and it must be under their personal direction.

Expenses:

Tuition	$150
Board and room	$425–550

Faculty: 32.
Students: 300.

Of special interest to foreign students.—The Catholic University of America offers thorough training in all departments amid a distinctly religious environment. Its location in Washington has the additional advantage of putting the student in contact with cultural and educational opportunities to be found nowhere else in the country.

The School of Sacred Sciences, which is strictly a graduate institution, offers exceptionally complete training for those graduates of a theological seminary who are looking forward to advanced study. Courses are given in the following departments: Sacred scripture, dogmatic theology, apologetics, moral theology, sacramental theology, canon law, church history, ascetic and pastoral theology.

The Department of Education emphasizes the philosophical and psychological aspects of the subject (and those principles upon which Catholic education is based). It includes courses in philosophy of education, psychology of education, science and art of study, general methods, school management and administration, history of education, and public-school administration in the United States.

Professors in the Catholic University teach in some of the undergraduate departments of Trinity College, and all of the graduate work is under their direction.

GEORGETOWN UNIVERSITY, Washington, D. C., a city of 437,571 inhabitants, the capital of the country. Founded, 1789.

The College.
  Undergraduate School.
    Admission: Completion of required 16 units of secondary-school work.
    Degrees:
      A. B.—Four-year course.
      B. S.—Four-year course.
  Graduate School.
    Admission: Bachelor's degree from a recognized college.
    Degrees:
      A. M.—One year.
      Ph. D.—Three years; thesis.
School of Medicine.
  Admission: Two years of collegiate work, including chemistry, physics, biology, and French or German.
  Degree: M. D.—Four-year course.
Dental School.
  Admission: Graduation from an approved secondary school.
  Degree: D. D. S.—Four-year course.
Law School.
  Admission: Graduation from an approved secondary school.
  Degrees:
    LL. B.—Three-year course.
    LL. M.—One year of postgraduate work after LL. B.; thesis.
    Master of Patent Law—One-year course in patent law, open to seniors, graduate students, and members of the bar.
Foreign Service School. Prepares for diplomatic, consular, or business career.—Two-year course.
Expenses:

Tuition—	
College	$150
School of Medicine	175
School of Dentistry	150
School of Law	110
School of Law (for patent-law course only)	40
Foreign Service School	120
Room and board, at university, including medical attendance	340–375
Room at university, per year	100
Room and board, outside university, per month	25–40
Total annual expense	500

Faculty, 182.

Students, 1,247, of whom 41 are from foreign countries, as follows: Canada, 2; Central America, 1; China, 1; Cuba, 2; Egypt, 1; Germany, 1; Greece, 1; Hawaii, 1; Ireland, 1; Panama, 8; Philippines, 5; Porto Rico, 12; Russia, 1; South America, 2; Spain, 1; Switzerland, 1.

Of special interest to foreign students.—Georgetown is under the control of the Catholic Church but admits students of all religious denominations.

The Dental and Medical Schools, which are of high grade and are provided with excellent clinical facilities in the city of Washington, have drawn many students from foreign countries.

As in the case of the two last-named institutions the location. in Washington, should prove attractive to the foreign student on account of the exceptional educational equipment and facilities for research in the great scientific collections and libraries of the Government, and because he is given opportunity to become acquainted, through daily observation and contact, with the American system of Federal administration.

GEORGE WASHINGTON UNIVERSITY, Washington, D. C., a city of 437,571 inhabitants, and the capital of the country. Founded, 1821; coeducational.

Columbian College, undergraduate.

Admission: 15 units; 7½ prescribed—3 English, 2½ mathematics, 2 foreign language.

Degrees: A. B.—Completion of 120 semester hours[38] of undergraduate courses.

College of Engineering.

Admission: 15 units; 13 prescribed—3 English, 4 foreign language, 4 mathematics, 2 science. (For the course in architecture the science is not prescribed, and only 2 units of foreign language are required.)

Degrees: B. S. in C. E., B. S. in E. E., B. S. in M. E., B. S. in Chem., B. S. in Chem. Eng., B. S. in Arch.—Four-year courses.

Teachers College.

Admission: 15 units; 7½ prescribed—3 English, 2½ mathematics, 2 foreign language.

Degree: A. B. and Bachelor's Diploma in Education.—Completion of 124 smester hours.[38]

School of Graduate Studies.

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M., S. M.—One year of postgraduate study; thesis.
C. E., M. E., E. E.—One year of postgraduate study; thesis.
Ph. D.—Three years of postgraduate study; thesis.

The university conducts graduate work in the following subjects: Applied mathematics, archaeology, architecture, anatomy, astronomy, astro-physics, bacteriology, botany, chemistry, commerce, economics, education, civil engineering, electrical engineering, hydraulic engineering, ethnology, mechanical engineering. English, ethics, geology and mineralogy, germanic languages and literature, Greek language and literature, gynecology, histology, embryology, history, history of art, international law and diplomacy, Latin language and literature, law, mathematics, meteorology, microscopy, nautical science, paleontology, pathology, philosophy, physics, physiology, pharmacology, political sciences, preventive medicine, psychiatry, psychology, Romance language and literature, Semitics, sociology, zoology.

Law School.

Admission: 15 units; 7½ prescribed—3 English, 2½ mathematics, 2 foreign language; one year of college work if applicant is under 21.

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[38] A "semester hour" of credit is one recitation, lecture, or laboratory period a week for an academic year. No time is prescribed for completion of a course in the college, but the degree is awarded when the student has the required number of credit hours.

Law School—Continued.

Degrees:

LL. B.—Three-year course.

LL. M. or Master of Patent Law—One year after LL. B. A bachelor's degree from a recognized college is a prerequisite.

Medical School.

Admission: One year of collegiate work in physics, chemistry, and biology.

Degrees:

M. D. —Four-year course.

B. S. and M. D.—Six-year course; 2 years in Columbian College and 4 years in Medical School.

School of Pharmacy.

Admission: Graduation from an approved secondary school.

Degree: Phar. D.—Three-year course.

Expenses:

Tuition—	
Colleges and law school, for each hour per week	$12
Graduate	180
Medical School	175
Dental School	150
College of pharmacy	80–90
Board and room, per month	45–50
Total annual expense	500–800

Faculty, 259.

Students, 2,650, of whom are foreign students from the following countries: Argentina, Bohemia, Canada, Central America, China, Cuba, France, Greece, Hawaii, Holland, Japan, Mexico, Philippines, Persia, Porto Rico, Russia, Switzerland, Transvaal.

Of special interest to foreign students.—Teachers College offers courses adapted to the needs of both prospective teachers desiring collegiate training and those already in the service who wish specialized instruction in particular phases of educational work.

In the department of political science the university offers courses for those intending to enter the consular or diplomatic service. The work includes a study of American and European government, political history of modern Europe and of South America, international law, elements of diplomacy and diplomatic usage, consular service, and colonial administration.

HOWARD UNIVERSITY, Washington, D. C., a city of 437,571 inhabitants. Founded, 1867, especially for the education of the Negro, although no race is excluded; coeducational.

The College (undergraduate) consists of the Junior College and four senior schools. The work of the first two years is done in the Junior College, whose courses prepare students for admission into the senior schools.

Junior College.

Admission: 15 units; 7 prescribed—3 English, 2 math language (or 2 sciences or 2 history).

Length of course—two years.

School of Liberal Arts.

Admission: Completion of Junior College work.

Degrees: A. B. and B. S.—Two-year courses.

School of Journalism (will not open until fall of 1920).

Admission: Completion of Junior College work.

Degree: B. S. in Journalism.

- School of Education.
  - Admission: Completion of Junior College work.
  - Degrees:
    - A. B. in Education—Two-year course.
    - B. S. in Education—Two-year course.
- School of Commerce and Finance.
  - Admission: Completion of Junior College work.
  - Degree: B. S. in Commerce.
- School of Applied Science.
  - Admission: Same as in Junior College.
  - Degrees: B. S. in C. E., in M. E., in E. E., in Architecture, in Agriculture, in Home Economics—Four-year courses.
- School of Music.
  - Admission: All persons are admitted, but for courses leading to degree graduation from an approved secondary school is required.
  - Degree: B. Mus.—Four-year course.
- School of Religion (interdenominational).
  - Admission:
    - To diploma course, graduation from an approved secondary school.
    - To degree course, bachelor's degree from a recognized college.
  - Degree:
    - B. D.—Three-year course.
    - Diploma—Three-year course.
- School of Medicine (comprises Medical College, Dental College, and Pharmaceutical College).
  - Medical College.
    - Admission: Completion of Junior College work, including special studies.
    - Degree: M. D.—Four-year course.
  - Dental College.
    - Admission: Graduation from an approved secondary school.
    - Degree: D. D. S.—Four-year course.
  - Pharmaceutical College.
    - Admission: Two years' work in approved secondary school.
    - Degree: Phar. D.—Three-year course.
- School of Law.
  - Admission: Graduation from an approved college or secondary school. (Those who are not college graduates must pass a preliminary examination.)
    - Degree: LL. B.—Three-year course.
- Graduate course—Leads to A. M. degree.
- Faculty, 131.
- Students, 1,491.
- Expenses (estimated for one quarter—three months—in any except professional schools):

Incidental fee	$15
Room rent, heat, light	12–14
Board, about $17 per month minimum	51–69
Laboratory fees and deposits in chemistry	10
Matriculation fee (first year only)	5
Laundry	10–20
Books	6–15

Expenses—Continued.

Professional Schools (tuition, one year):

Medical College	$125
Dental College	100
Pharmaceutical College	80
Laboratory fees in Medical College and Dental College, per year	25
Laboratory fee in Pharmaceutical College, per year	20

COLLEGE OF HAWAII, Honolulu, Hawaii, a city of 52,000 inhabitants. Founded, 1907; a "land-grant" institution; coeducational.

Undergraduate courses.

Admission: (1) Graduation from approved high school. (2) 15 units; 5½ prescribed—3 English, 2½ mathematics. For students specializing in engineering an additional unit of mathematics is prescribed.

Courses, 4 years:

- Agriculture; degree, B. S. in Agr.
- Civil engineering; degree, B. S. in C. E.
- Sugar technology; degree, B. S. in S. T.
- Science: Group A.—Physical sciences; B.—Biological sciences; C.—Domestic arts and sciences; degree, B. S.

Graduate courses.

Admission: Bachelor's degree from a recognized college.

Degrees: M. S., M. S. A., C. E.—one-year postgraduate study; thesis.

Expenses:

Tuition (free to residents of Hawaii)	$50
Board	225
Room	90
Total annual expenses, including books and stationery	400

Faculty, 22.

Students, 145, embracing 35 Chinese, 15 Japanese, 6 Koreans.

Of special interest to foreign students.—On account of its location the college is able to provide special facilities for instruction in the agriculture of tropical countries. Courses are offered in plant breeding and selection, tropical crops, and sugar-cane production.

A four-year course in sugar technology has recently been introduced to train men in the fundamentals of sugar chemistry, sugar-cane production, and the manufacture of raw sugar. Hawaii's scientifically managed plantations and favorable climate are unusual advantages. In this connection the department of engineering offers a course in the engineering of sugar plants.

Hawaii's climate, which permits outdoor work throughout the year, and the variety of plant and animal life, facilitate work in zoology, botany, and entomology, for which excellent equipment is provided. The college possesses the most complete herbarium of Hawaiian plants in existence.

A new charter has been granted whereby a University of Hawaii is created to become effective at the opening of the year in 1920–21. Courses leading to the B. A. degree will be offered. Special emphasis will be laid on studies of interest and value in the life and commerce of the Pacific.

ARMOUR INSTITUTE OF TECHNOLOGY, Chicago, Ill., a city of 2,701,705 inhabitants. Founded, 1892.

Undergraduate Department.

Admission: 15 units; 12½ prescribed—3½ mathematics, 3 English, 2 science, 1 history, 2 foreign language, 1 mechanical drawing.

Undergraduate Department—Continued.

Courses, 4 years:

- Mechanical engineering; degree, B. S. in M. E.
- Electrical engineering; degree, B. S. in E. E.
- Civil engineering; degree, B. S. in C. E.
- Chemical engineering; degree, B. S. in Ch. E.
- Fire-protection engineering; degree, B. S. in Fire Protection Engineering.
- Architecture; degree, B. S. in Arch.
- Industrial arts; degree, B. S. in Industrial Arts.

Graduate Department.

Admission: Bachelor's degree from a recognized college.

Degrees: M. S.—One year of postgraduate study; thesis. M. E., E. E., C. E., Ch. E., Fire Protection Engineer.—Conferred without resident study upon graduates of Armour Institute who have had at least three years' successful engineering practice or teaching, and who present a thesis.

Expenses:

Tuition	$180
Board and room, per week	8–10
Total annual expense	600

Faculty, 60.

Students, 605, of whom 9 are from foreign countries, as follows: Argentina, 1; Australia, 1; Canada, 1; China, 3; Hawaii, 1; Lithuania, 1; Russia, 1.

Of special interest to foreign students.—The department of fire-protection engineering offers instruction in these subjects: Fire-protection engineering, underwriters' requirements, special hazards, insurance practice and schedule rating, and electrical machinery. The Underwriters' Laboratories at Chicago, conducted and maintained by the fire-insurance companies of the country, have excellent facilities for experimental and research work.

Through cooperation with the Art Institute of Chicago, exceptional facilities for courses in architecture are provided.

In the department of civil engineering the institute has recently established courses in aeronautics, including instruction in aerodynamics, aeronautical designing, and gas engines.

NORTHWESTERN UNIVERSITY, Evanston and Chicago, Ill. The College of Liberal Arts, the Graduate School, the College of Engineering, the Theological Schools, the School of Music, and the School of Oratory are located in Evanston, a city of 37,234 inhabitants, 12 miles north of the center of Chicago, and continuous with it. The Schools of Law, Medicine, Dentistry, and Commerce are in Chicago, a city of 2,701,705 inhabitants. Founded, 1851.

College of Liberal Arts (undergraduate).

Admission: 15 units; 7 prescribed—3 English, 2 mathematics, 2 foreign language.

Degrees: B. A. and B. S.—Four-year courses.

Graduate School.

Admission: Bachelor's degree from recognized college.

Degrees:

- M. A.—One year of postgraduate study; thesis.
- Ph. D.—Three years of postgraduate study; thesis.
- M. S. T.—Three years in a theological school; one year of postgraduate work in theology; thesis.

Medical School.

Admission: Two years of college work.

Degree: M. D.—Four-year course and additional hospital year.

Law School.

Admission: Three years of college work.

Degrees:

LL. B. and J. D.—Four-year course, except that candidates entering with a bachelor's degree may complete the course in three years.

LL. M.—One year of study after receiving LL. B.; thesis.

College of Engineering.

Admission: As in College of Liberal Arts.

Degrees:

B. S.—Four-year course.

E. E. and C. E.—Five-year courses.

Dental School.

Admission: Graduation from recognized high school.

Degree: D. D. S.—Four-year course.

School of Commerce.

Admission: Two years of collegiate work.

Degree: B. B. A.—Three years' study and thesis.

Garrett Biblical Institute, primarily a Methodist theological seminary, but open to any properly recommended students.

Graduate School of Theology.

Admission: Bachelor's degree from recognized college.

Degree: B. D.—Three-year course.

Miscellaneous:

School of Music.

School of Oratory.

Expenses:

Tuition—

College of Liberal Arts	$150
Graduate School (based on courses taken), not to exceed	50
Medical School	180
Law School	160
Engineering School	150
Dental School	200
School of Commerce (based on courses taken), average	45

Theological School, free.

Board, $6 to $7 a week.

Room, $10 to $15 a month.

Total annual expense $425–750

Faculty, 462.

Students, 4,010, of whom 66 are from foreign countries, as follows: Armenia, 1; Austria, 1; British West Indies, 2; Canada, 6; China, 7; England, 1; France, 3; Germany, 4; Hawaii, 3; India, 1; Italy, 1; Japan, 1; Korea, 2; Lithuania, 1; Macedonia, 1; Norway, 2; Persia, 1; Philippines, 5; Poland, 4; Rumania, 2; Russia, 13; Siam, 1; Slovia, 1; Turkey, 2.

The College of Liberal Arts offers a great variety of courses for undergraduate students leading to a bachelor's degree. These are supplemented by advanced courses in the Graduate School leading to a master's or doctor's degree.

Of special interest to foreign students.—The medical school occupies well-equipped buildings in the center of Chicago. In addition numerous hospitals and dispensaries throughout the city provide abundant opportunities for clinical instruction. Wesley Hospital and Mercy Hospital each conducts a training school for nurses with a curriculum under the supervision of the university.

The Law School requires three years of college study for admission and four years of law study for a degree. College graduates may complete the law course in three years. The law library is especially well supplied with foreign books.

The Dental School is of the first rank. A special postgraduate or practitioner's course, lasting four weeks, is offered each year.

The location of the School of Commerce, in Chicago, offers unusual opportunities for practical observation and study of modern business and business problems in one of the country's greatest commercial centers.

The College of Engineering introduces an unusual number of nontechnical courses into its curriculum with the intention of giving its graduates a broader and more general training than is commonly done.

UNIVERSITY OF CHICAGO, Chicago, Ill., a city of 2,701,705 inhabitants, and one of the great railway centers of the country. Incorporated 1890; coeducational.

The Colleges, four-year undergraduate courses. The work is divided into two parts. That of the first two years is spent in the "Junior College." At its completion the student passes on to the "Senior College," for the work of the two last years before the bachelor's degree.

Admission: The subjects are arranged in these groups: (1) Greek, (2) Latin, (3) modern languages other than English, (4) history, civics, and economics, (5) mathematics, (6) science.

Required: Fifteen units, including 3 in English; 3 (or more) in a single group, 1–6; 2 (or more) in another single group, 1–6; 2 (or less) in any of the groups. Five units may be offered in any subjects accepted by an approved secondary school.

Degrees: A. B., B. S., Ph. B. The subjects in which a student specializes determine the degree to be awarded.

The Graduate Schools: Graduate School of Arts and Literature; Ogden Graduate School of Science.

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M. and M. S.—One year of graduate study; thesis.

Ph. D.—Three years of graduate study; thesis. The doctor's degree is given "not on the basis of the completion of a certain amount of time spent on a specified program, but as the recognition and mark of high attainments and ability in the candidate's chosen province."

The Divinity School.

English Theological Seminary.

Admission: Fifteen units, as in the colleges. Four years prescribed curriculum of resident study during summer quarters and nonresident correspondence work during remainder of year.

Graduate Divinity School.

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M.—One year of graduate work; thesis.

D. B.—Three years of graduate work; thesis.

Ph. D.—Four years of graduate work; thesis. (See note regarding this degree in the Graduate Schools.)

The Law School.

Admission for the degree LL. B.: Granted to mature students who have completed work equivalent to the college entrance requirements.

The Law School—Continued.
  Degree: LL. B.—Three years of study, with average standing 10 per cent above the passing mark.
  Admission for the degree J. D.: Three years of collegiate work. Before receiving the J. D. students must receive a bachelor's degree from the College of the University of Chicago or from an equivalent college. The first year in the law school may be counted toward this, and the bachelor's degree be awarded at its completion.
  Degree: J. D.—Two or three years of graduate work, dependent upon whether the undergraduate work has included one year of law.

The Medical School (Rush Medical College).
  Admission: Two years of collegiate work, including chemistry, physics, biology, two years of Latin, and a reading knowledge of French or German.
  Degree: M. D.—Five years, one year to be spent as an interne in a hospital or in advanced work in one of the departments of the school.

School of Education.
  The University Elementary School and the University High School.
  The College.
    Admission: 15 units, as in the other colleges.
    Degrees:
      A. B., S. B., or Ph. B. in Education—four years.
      Kindergarten Primary Certificate—two years.
      Manual Arts Certificate—two years.
      Home Economics and Household Arts Certificate—two years.
      Graphic and Plastic Arts Certificate—two years.
      Supervisor's Certificate (for kindergarten and elementary schools), one year.
        Graduation from a normal or kindergarten training school is required for admission to this course.
        To obtain the Home Economics and Household Arts, Graphic and Plastic Arts, or Supervisor's Certificate, three years of teaching experience or a two-years' normal course above a four-year high school is required.
  Graduate Department.
    Admission: Bachelor's degree from a recognized college.
    Degrees: A. M., M. S., Ph. D., conferred by the Graduate Schools of Arts, Literature, and Science.

College of Commerce and Administration.
  The Trade and Industry Division—For those intending to enter various business pursuits.
  The Charitable and Philanthropic Division—For those intending to enter social-service work.
  The Public Service Division—For those expecting to work in various public-service bureaus.
  Undergraduate Departments.
    Admission: 15 units, as in the other colleges.
    Degree: Ph. B.—Four-year course.
  Graduate Departments.
    Admission: Bachelor's degree from recognized college.
    Degrees: A. M. and Ph. D.—Conferred under the same conditions as in the graduate school.

College of Commerce and Administration—Continued.

College of Religious and Social Sciences—A group within the College of Commerce and Administration, planned to meet the needs of these classes of students: (1) Those preparing to be Y. M. C. A. secretaries or to fill like positions; (2) those preparing for the work of medical missionaries (for this a college course and a medical course are presupposed); (3) those preparing for the ministry, who can not afford time for a separate college and divinity school course.

Admission: 15 units, as in the other colleges.

Degree: Ph. B.—Four-year course.

Expenses:

Tuition—	
Undergraduate colleges and School of Law	$150
All graduate schools	120
School of Medicine	180
Room (university dormitory)	60–225
Board (university commons)	135–225
Total annual expense	340–715

Faculty, 344.

Students, 10,448, of whom 344 are from foreign countries, as follows: Australia, 1; Austria, 2; Belgium, 1; Burma, 1; Canada, 94; Chile, 1; China, 40; Denmark, 1; England, 7; France, 1; Germany, 1; Greece, 1; Iceland, 1; India, 7; Korea, 1; Jamaica, 1; Japan, 31; New Zealand, 1; Norway, 1; Palestine, 1; Roumania, 1; Russia, 2; Scotland, 2; South Africa, 1; Sweden, 2; Syria, 2; Turkey, 2; Wales, 3.

Of special interest to foreign students.—(1) As parts of the School of Education the university maintains a high school and an elementary school of standard type. These give unusual opportunity for observation of methods and for the practice teaching required of all students.

(2) The Medical School is among the best in the country.

(3) The Divinity School requires that students shall select one of the following as a field for future work: The pastorate, religious education, social service, foreign missionary work. Various curricula are prescribed to fit each particular field. Special attention should be called to courses in the department of practical sociology.

(4) Courses offered in the Graduate Schools are of the highest rank. Opportunities for specialization are offered in the following departments: Philosophy, psychology, education, political economy, political science, history, history of art, sociology and anthropology, household administration, comparative religion, Semitic languages and literatures, biblical and patristic Greek, Sanskrit and Indo-European comparative philology, Greek, Latin, Romance, Germanic, English language and literature, general literature, mathematics, astronomy and astrophysics, physics, chemistry, geology, geography, zoology, anatomy, physiology, paleontology, botany, pathology, hygiene, and bacteriology.

(5) The university is in session throughout the year. The calendar year is divided into four quarters. Any three of these are the equivalent of an academic year. In the majority of cases students may, by attendance during the four quarters, considerably lessen the number of academic years required for a degree.

A large correspondence-study department and a university college for afternoon, evening, and Saturday classes are maintained.

UNIVERSITY OF NOTRE DAME, Notre Dame, Ind., a town of 1,000 inhabitants, 2 miles from South Bend, Ind. a city of 70,983 inhabitants, and 80 miles east of Chicago, Ill., a city of 2,701,705 inhabitants. Founded 1842; for men only.

College of Arts and Letters.

Admission: 16 units; 13 prescribed—4 English, 2 Latin, 2 French or German, 2 history, 2 mathematics, 1 science. For the department of classics all 16 units are prescribed, there being 7 foreign language units required. These must be, 4 Latin and 3 Greek.

Degrees: A. B., Lit. B., Ph. B., Ph. B in Journalism, Ph. B. in Commerce, Ph. B. in For. Com., Ph. B. in Education—Four-year courses.

College of Science.

Admission: 16 units; 13 prescribed—4 English, 2 science, 3 mathematics, 2 foreign language, 2 history.

Degrees: B. S., B. S. in Chem., B. S. in Biol., B. S. in Phar., B. S. in Ag.—Four-year courses. A thesis is required.

Short courses in pharmacy. Two years for those who have completed one year of high-school work, and leading to degree Ph. G. Three years for those who have completed high-school work, and leading to degree Ph. C.

College of Engineering.

Admission: 16 units, as in College of Science.

Degrees: C. E., M. E., E. E., E. M., Chem. E., I. E. (Industrial Engineer)—Four-year courses. A thesis is required.

College of Architecture.

Admission: 16 units, as in the College of Science.

Degrees:

B. S. in Architecture, B. S. in Architectural Engineering—Four-year courses.

M. S. in Architecture, M. S. in Architectural Engineering—One year postgraduate study; thesis. These masters' degrees may also be conferred for work done in absentia on students who have received the bachelor's degree at Notre Dame.

College of Law.

Admission: 16 units; 13 prescribed, as in the College of Letters.

Degrees:

LL. B.—Four-year course.

LL. M.—One year after LL. B.; thesis.

LL. D, or D. C. L.—Three years after LL. B.; thesis.

For either of these degrees, an A. B. or a B. S. is a prerequisite.

College of Music.

Admission: As in the College of Arts and Letters.

Degree: B. Mus.—Four-year course.

Graduate courses:

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M.—One year of graduate study; thesis.

M. S.—One year of graduate study; thesis.

E. A. (Engineering Administrator), given for one year's work in business administration after the completion of a four-year course in engineering.

Master of Music—One year of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis.

Short courses: Two-year courses in commerce, agriculture, architecture, mechanical and electrical engineering; for mature students seeking practical knowledge, who have not completed high school and are limited as to time and means.

Expenses: Board, room, and tuition, $500.

Faculty, 90.

Students, 1,071, of whom 57 are from foreign countries.

Of special interest to foreign students.—The College of Engineering is equipped with ample laboratories and shops for instruction in civil, mechanical, electrical, mining, industrial, and chemical engineering. The proximity to the city of South Bend affords the student opportunity for observation in modern engineering plants.

Although students of all religious denominations are admitted, the university is strictly a Roman Catholic institution.

UNIVERSITY OF ILLINOIS, Urbana-Champaign, Ill., a city of 25,000 inhabitants, 126 miles south of Chicago, 118 miles west of Indianapolis, 164 miles northeast of St. Louis. Founded, 1867; a "land-grant" institution; coeducational.

College of Liberal Arts and Sciences.

Admission: 15 units; 6 prescribed—3 English, 2 mathematics, 1 laboratory science. Additional prescriptions for various courses, as follows: Liberal arts and sciences, journalism, and prelegal—2 foreign language; home economics—2 foreign language, 1 physics; premedical—2 foreign language, 1 history or civics; chemistry and chemical engineering—2 French or German, ½ advanced algebra, 1 chemistry.

Degrees: A. B. and B. S.—Four-year courses. B. S. is conferred on a graduate of the College of Liberal Arts and Sciences who completes a curriculum in chemistry, and may be conferred on graduates from other curricula in this college on recommendation of the faculty.

College of Commerce and Business Administration.

Admission: 15 units; 6 prescribed—3 English, 2 mathematics, 1 laboratory science. Additional prescriptions, 3 options—2 foreign language, or 1 mathematics, or 1 science.

Degree: B. S.—Four-year courses in general business, banking, insurance, accountancy, railway administration and transportation, industrial administration, etc.

College of Engineering.

Admission: 15 units; 7 prescribed—3 English, 3 mathematics, 1 laboratory science.

Courses, four years:	Degree.
Architecture	B. S. in Architecture.
Architectural engineering	B. S. in Architectural Engineering.
Civil engineering	B. S. in Civil Engineering.
Electrical engineering	B. S. in Electrical Engineering.
Mechanical engineering	B. S. in Mechanical Engineering.
Mining engineering	B. S. in Mining Engineering.
Municipal and sanitary engineering.	B. S. in Municipal and Sanitary Engineering.
Railway civil engineering	B. S. in Railway Civil Engineering.
Railway electrical engineering	B. S. in Railway Electrical Engineering.
Railway mechanical engineering	B. S. in Railway Mechanical Engineering.
General engineering physics	B. S. in General Engineering Physics.

College of Agriculture.

Admission: 15 units; 7 prescribed—3 English, 2 mathematics, 2 science (for the courses in home economics and interior decoration, 1 of these must be physics).

Courses, four years:

	Degree.
General agriculture	B. S. in Agriculture.
Farm organization and management.	B. S. in Agriculture.
Floriculture	B. S. in Floriculture.
Home economics	B. S. in Home Economics.
Interior decoration	B. S. in Home Economics.
Landscape gardening	B. S. in Landscape Gardening.

School of Music.

Admission: 15 units; 10 prescribed—3 English, 2 mathematics, 1 laboratory science, 2 foreign language, 2 music.

Degree: B. Mus.—Four-year course.

Graduate School.

Admission: Bachelor's degree from recognized college.

Degrees: M. A., M. S., and Ph. D. For the M. A. or M. S., one year of postgraduate study with thesis. For the Ph. D., three years of postgraduate study with thesis giving evidence of research ability.

Professional engineering degrees.—In addition to the usual master's degree, M. S., which is given for one year of postgraduate academic work in residence, professional degrees are given as indicated below:

For three years of successful professional work, either in residence at or away from the university (the latter privilege being open, however, only to graduates of the University of Illinois), and the presentation of an acceptable thesis. The degrees are: M. Arch., A. E., C. E., E. E., M. E., according to the course taken.

Students not candidates for degrees.—Students of mature age whose education has been irregular are admitted to graduate courses or to the pursuit of research on proving their ability to carry the work, provided they are not candidates for degrees.

Work for the doctor's degree may be taken in the different departments of the arts and sciences and in the sciences underlying engineering, agriculture, and medicine.

Library School.—For those wishing to enter library work as a profession.

Admission: Bachelor's degree from a recognized college.

Degree: Bachelor of Library Science—two-year course.

School of Education.

Students planning to teach and registered in the colleges of the university are at the beginning of the third year enrolled in the School of Education and have the remaining two years of their undergraduate work directed by its faculty. The regular baccalaureate degree is granted.

School of Law.

Admission: Two years of collegiate work for the three-year course; one year of collegiate work for the four-year course.

Degrees:

LL. B.—Three-year course and four-year course.

J. D.—Three-year course, as for LL. B.; thesis. (A bachelor's degree from a recognized college and a high grade of scholarship in the law course are prerequisites for J. D.)

College of Medicine (located in Chicago).

Courses:

(1) Eight years—four years in College of Liberal Arts and Sciences (Urbana) for A. B., and four years in College of Medicine (Chicago) for M. D. Entrance requirement: 15 units; 9 prescribed—3 English, 2 mathematics, 1 laboratory science, 2 foreign language, 1 history or civics.

(2) Seven years—three years' course in College of Liberal Arts and Sciences (Urbana), and four years in College of Medicine (Chicago). A. B. degree after first year in College of Medicine and M. D. at end of course. Entrance requirement: Same as for (1) above.

(It is recommended that for the sake of the broader training, wherever possible, the student take the eight-year course.)

(3) Four years. In College of Medicine (Chicago). Entrance requirement: (1) 15 units of secondary work, including 8 prescribed—3 English, 2 mathematics, 2 German, French, Latin, or Greek, 1 history or civics; and (2) two years (60 semester hours) of college work, including 40 prescribed—12 chemistry, 8 physics, 8 biology, 6 German or French, 6 English. B. S. after first two years and M. D. after fourth year.

College of Dentistry (located in Chicago).

Admission: 15 units; 6 prescribed—3 English, 2 mathematics, 1 physics.

Degree: D. D. S.—Four-year course.

School of Pharmacy (located in Chicago).

Admission: 15 units; 6 prescribed—3 English, 2 mathematics, 1 science.

Degrees:

Graduate in Pharmacy—two-year course. Degree awarded after four years' practical drug experience. The time spent in residence at the school may be counted a part of this requirement.

Phar. Chem.—Three-year course, with special emphasis upon laboratory work.

Expenses:

Tuition—	
School of Music	$20-$54
College of Medicine	150-165
College of Dentistry	155
School of Pharmacy—	
First two years	105
Third year	145
Incidental fee—	
Colleges of Liberal Arts and Sciences, Commerce and Business Administration, Engineering, Agriculture, Library School, and Music School	30
Board, at Urbana	160-200
Room, at Urbana	72-80
Board and room, at Chicago, per week	5-6
Total annual expense	375-500

Faculty, 790.

Students, 7,145, of whom 189 are from foreign countries, as follows: China, 53; Japan, 23; Brazil, 15; Russia, 15; Canada, 12; India, 9; England, 8; Mexico, 7; Norway, 4; Chile, 3; Peru, 3; Germany 3; Poland, 3; Finland, 3; South Africa, 2; Bulgaria, 2; Armenia, 2; Austria-Hungary, 1; Bolivia, 1; Burma, 1; Egypt, 1; Ecuador, 1; France, 1; Greece, 1; Holland, 1; Italy, 1; Ireland, 1; Jamaica, 1; Nopal, 1; Panama, 1; Scotland, 1; Serbia, 1; Sweden, 1; Philippines, 4; Hawaii, 1; Porto Rico, 1.

Of special interest to foreign students.—Located in the heart of the great corn country, the university, in the College of Agriculture, offers particularly strong courses dealing with this grain and its culture. A close affiliation maintained with the State experiment station enables the university to support a much larger faculty and permit a higher degree of specialization than would otherwise be possible. Among the noteworthy courses in this college may be mentioned animal husbandry, with opportunity for advanced work in animal nutrition; agronomy, particularly soils and grains; entomology, and landscape gardening.

The College of Engineering is of first rank. The work in civil and electrical engineering is particularly strong, and the university maintains an engineering experiment station devoted entirely to research.

In the newly organized College of Commerce the university offers courses in business administration, including social and industrial economics, accountancy, banking, and railway administration. The work in railway administration is divided into two general courses; in one, emphasis is upon traffic and accounting; the other, with stress upon the transportation service, prepares men directly for transportation department of railways.

Preparation for journalistic work, either on the managerial and advertising, or on the repertorial, literary, or editorial side, is provided.

The Library School is among the best in the country. The course includes numerous visits to libraries, book binderies, book stores, and printing establishments in the vicinity, and each student is required to spend at least one month in practical work in an assigned public library.

The Graduate School, which has recently been reorganized, is of high rank.

The school has a certain number of scholarships (stipends $300 per year) and fellowships (stipends $300 to $500 per year) which are open for application by all candidates.

INDIANA UNIVERSITY, Bloomington, Ind., a city of 11,595 inhabitants. A State institution, founded, January 20, 1820.

College of Liberal Arts.

Admission: 16 units; 11 prescribed—3 English, 1 algebra, 1 geometry, 2 foreign language, 1 history, 1 science, and 2 additional from any of the preceding subjects.

Degrees:

A. B.—Four-year course.

B. S.—Two-year premedical course and two years of medicine; four-year course in home economics.

School of Education.

Admission: Same as College of Liberal Arts.

Degrees: A. B., A. M., Ph. D.

Requirements for degrees same as in College of Liberal Arts and Graduate School.

Graduate School.

Admission: Bachelor's degree from a standard college.

Degrees:

A. M.—One year of graduate work.

Ph. D.—Three years' graduate study and thesis.

School of Law.

Admission: Same as College or Liberal Arts plus 2 years of college work in a standard college.

Degrees:

LL. B.—Three-year course.

J. D.—Three-year course with superior record after graduation with A. B. from a standard college.

School of Medicine.

Admission: Certificate of State Board of Medical Registration and Examination granted after completion of requirements for admission to the College of Liberal Arts and a two-year premedical course in college.

Degrees:

M. D.—Four-year course.

M. D. *cum laude*—Five-year course and thesis.

Expenses:

Contingent and library fees (residents of Indiana)	$10.50–$18.00
Contingent and library fees (nonresidents of Indiana)	30.00
Laboratory fees	1.50– 7.50
Gymnasium fee	2.00
Tuition, School of Medicine:	
First and second years, per year	100.00
Third and fourth years, per year	150.00
Room, per week	1.25– 2.50
Board, per week	4.00– 5.50
Books and supplies, per semester	6.00– 18.00

Faculty, 220.

Students, 3,210, of whom 9 are from foreign countries.

Of special interest to foreign students are the courses in commerce.

PURDUE UNIVERSITY, Lafayette, Ind., a city of 22,486 inhabitants. Founded, 1869; a "land-grant" institution; coeducational.

Admission: 15 units; 9½ prescribed—3 English, 2 foreign language, 2½ mathematics, 1 science, 1 history. For the engineering schools an additional ½ unit of solid geometry.

Undergraduate courses, 4 years:	Degrees.
Science	B. S.
Agriculture	B. S. in Agriculture.
Chemical engineering	B. S. in Chemical Engineering.
Civil engineering	B. S. in Civil Engineering.
Electrical engineering	B. S. in Electrical Engineering.
Mechanical engineering	B. S. in Mechanical Engineering.
Pharmacy	B. S. in Pharmacy.

A two-year course in pharmacy leads to the degree Pharmaceutical Chemist.

Graduate Department.

Admission: Bachelor's degree from a recognized college.

Degrees: M. S., M. S. in Agriculture, M. E., C. E., E. E., Ch. E.—One year of postgraduate study and thesis.

Expenses:

Tuition (for nonresidents of Indiana)	$61
Board, per week	6
Room, per month	8
Entrance and incidental fee	15
Average annual expense	400–500

Faculty, 200.

Students, 2,550, of whom 18 are from foreign countries, as follows: Bolivia, 1; Chile, 1; China, 11; Colombia, 1; Cuba, 2; Hungary, 1; Russia, 1.

Of special interest to foreign students.—The engineering courses, with exceptional laboratory equipment and large faculty, afford excellent opportunity for the study of civil, electrical, mechanical, and chemical engineering.

The School of Pharmacy is organized on the basis of college work; the School of Agriculture emphasizes work in animal husbandry, agronomy, horticulture, and dairy husbandry. In the School of Science extensive courses in chemistry, physics, and biology, including bacteriology and forestry, are offered.

IOWA STATE COLLEGE, Ames, Iowa, a town of 6,270 inhabitants. Founded, 1858; a "land-grant" institution.

Admission: 15 units; 11 prescribed—3 English, 2½ mathematics, 1 history; 4 additional units distributed among the foregoing subjects and the natural sciences. For admission to the divisions of engineering and industrial science an additional ½ unit of solid geometry is prescribed.

Collegiate courses.
- Division of Agriculture:
  - Four-year courses—
    - Agricultural economics and rural sociology; degree, B. S. in Agricultural Economics and Rural Sociology.
    - Agricultural education; degree, B. S. in Agricultural Education.
    - Agriculture and manual training; degree, B. S. in Agriculture and Manual Training.
    - Agricultural engineering; degree, B. S. in Agricultural Engineering.
    - Animal husbandry; degree, B. S. in Animal Husbandry.
    - Dairying; degree, B. S. in Dairying.
    - Farm crops and soils; degree, B. S. in Farm Crops and Soils.
    - Forestry; degree, B. S. in Forestry.
    - Horticulture; degree, B. S. in Horticulture.
    - Landscape architecture; degree, B. S. in Landscape Architecture.
  - Five-year courses—
    - Farm management; degree, B. S. in Farm Management.
    - Forestry; degree, Master of Forestry.
    - Sciences and agriculture; degree, B. S. (in specific subjects).
  - Two-year course—Agriculture; certificate.
- Division of Engineering:
  - Four-year courses—
    - Agricultural engineering; degree, B. S. in Agricultural Engineering.
    - Architectural engineering; degree, B. S. in Architectural Engineering.
    - Ceramics engineering; degree, B. S. in Ceramics Engineering.
    - Chemical engineering; degree, B. S. in Chemical Engineering.
    - Civil engineering; degree, B. S. in Civil Engineering.
    - Electrical engineering; degree, B. S. in Electrical Engineering.
    - Mechanical engineering; degree, B. S. in Mechanical Engineering.
    - Manual training, trades and industries; degree, B. S. in Trades and Industries.
    - Mining engineering; degree, B. S. in Mining Engineering.
  - Five-year course—Science and engineering; degree, B. S. and B. S. (in specific subjects).
  - Two-year course—Rural structure design; certificate.

Collegiate courses—Continued.

- Division of Home Economics:
  - Four-year courses—
    - Home economics; degree, B. S. in Home Economics.
    - Home economics and agriculture; degree awarded.
  - Five-year course—Science and home economics; degree, B. S. and B. S. in Home Economics.
- Division of Industrial Science:
  - Four-year courses—Industrial science; degree, B. S.
  - Five-year courses—
    - Science and agriculture; degree, B. S. and B. S. (in specific subjects).
    - Science and engineering; degree, B. S. and B. S. (in specific subjects).
    - Science and home economics; degree, B. S. and B. S. in Home Economics.
  - Six-year course—Science and veterinary medicine; degree, B. S. and D. V. M.
- Division of Veterinary Medicine:
  - Four-year course—Veterinary medicine; degree, D. V. M.
  - Six-year courses—
    - Animal husbandry and veterinary medicine; degree, B. S. in A. H. and D. V. M.
    - Science and veterinary medicine; degree, B. S. and D. V. M.
    - Special course for practitioners; certificate.

Graduate Division.

Admission: Bachelor's degree from a recognized college.

Degrees:

- M. S. (in specific subjects).—One year of postgraduate work.
- Ph. D.—Three years of postgraduate study; thesis.

The Engineering Division grants the following professional degrees at the completion of one year of postgraduate study and one year's responsible practice, or of five years of responsible practice: A. E., C. E., Ch. E., E. E., M. E., E. M.

The Graduate Division conducts advanced research and gives instruction in the five major lines of work of the college—agriculture, engineering, home economics, industrial sciences, and veterinary medicine.

Expenses:

Tuition per quarter (free to residents of Iowa; to nonresidents of Iowa)	$17.00
Board and room, per week	5.50
Incidental fee, per quarter	6.00
Laboratory fees.	
Total annual expense need not exceed	400.00

Faculty, 287.

Students, 2,893, of whom 7 are from foreign countries, as follows: Canada, 2; South Africa, 1; Australia, 1; South America, 1; India, 1; Denmark, 1.

Of special interest to foreign students.—The college has a complete course in forestry, with opportunity for specialization in the following groups: General forestry, forest management, silviculture, forest utilization and products, forest protection, and forest engineering.

The course in veterinary medicine includes surgery, anatomy, medicine, pathology and bacteriology, physiology, and pharmacology. During the senior year there is opportunity for special work in bacteriology and pathology or for individual research.

Thorough courses are offered in agriculture, especially in animal husbandry, agronomy, and dairying, for which the college possesses unusual facilities in the matter of live stock.

A course in agricultural engineering is offered jointly by the divisions of agriculture and engineering.

STATE UNIVERSITY OF IOWA, Iowa City, Iowa, a city of about 11,267 inhabitants. Founded, 1847; coeducational.

College of Liberal Arts, undergraduate.
- Admission: 15 units; 6 prescribed—3 English, 1 history, 2 mathematics (2 units in a single foreign language are required for admission to the combined liberal arts and medical course).
- Degrees:
  - B. A.—Four-year course.
  - B. S.—Six-year combined course in liberal arts and medicine, homeopathic medicine, or dentistry.

College of Education.
- Admission: As in College of Liberal Arts.
  - At the completion of a four-year course which fulfills all requirements for the bachelor's degree and includes a specified amount of professional work, a certificate is granted.

College of Applied Science.
- Admission: 15 units, as in College of Liberal Arts, except that an additional one-half unit each in advanced algebra and solid geometry is prescribed.
- Degrees:
  - B. Eng.—Four-year course in a specific branch of engineering (one five-year course in chemical engineering).
  - B. S.—Four-year course in general engineering or chemistry.
    - Advanced professional degrees are granted to graduates in engineering who have had four years' professional experience, one of which must have been in a responsible position and another of which may have been spent in graduate work.

Graduate College.
- Admission: Bachelor's degree from a recognized college.
- Degrees:
  - M. S., M. A.—One year of postgraduate study; thesis.
  - Ph. D.—Three years' postgraduate study; thesis.

College of Law.
- Admission: Two years' collegiate work.
- Degree: LL. B.—Three-year course.

College of Medicine.
- Admission: Two years' collegiate work, including English, a foreign language, physics, chemistry, biology, and a minimal amount of nonscience credit.
- Degree: M. D.—Four-year course.

College of Dentistry.
- Admission: Graduation from an accredited secondary school.
- Degree: D. D. S.—Four-year course.

College of Pharmacy.

Admission: Graduation from an accredited secondary school.

Degrees:

- Ph. G.—Two-year course.
- Ph. C.—Three-year course.
- B. S. in Pharm.—A combined academic and professional course as outlined. Admission requirements as in College of Liberal Arts.

Miscellaneous.

- School of Political and Social Science and Commerce.
- School of Music.—Four-year course leading to degree B. Mus.
- Training School for Nurses.

Expenses:

Tuition—

Colleges of Liberal Arts and Education	$20
College of Applied Science (Engineering):	
Residents of Iowa	20
Students from outside of Iowa	40
Colleges of Law and Pharmacy	50
Colleges of Medicine and Homeopathic Medicine:	
Residents of Iowa	85
Students from outside of Iowa	100
College of Dentistry:	
First-year students	90
Second-year, third-year, and fourth-year students	150
Graduate College	None.
Board ($4 a week and upward), average	5
Room ($6 a month and upward), average	7

Faculty, 280.

Students, 3,500, of whom 31 are from foreign countries.

Of special interest to foreign students.—The College of Education aims to give teachers a liberal education and to supply specialized training in that particular professional field which may be selected.

The College of Medicine is well equipped, and ranks among the best medical schools in the country.

KANSAS STATE AGRICULTURAL COLLEGE, Manhattan, Kansas, a town of 8,000 inhabitants. Founded in 1863; a "land-grant" institution.

Admission: 15 units; 6 prescribed—3 English, 1 algebra, 1 geometry, and and 1 elementary physics. For the curriculum in general science 1½ units of algebra, and for engineering curricula 1½ units each of algebra and geometry.

Collegiate courses.

Division of Agriculture:

Four-year curriculum—

Agriculture; degree, B. S. in Agriculture. In this curriculum opportunity is afforded in the junior and senior years for a major line of electives in any one of the following lines: Agronomy, animal husbandry, dairy husbandry, poultry husbandry, horticulture, milling industry, veterinary medicine and agricultural economics.

Six-year curriculum—

Animal husbandry and veterinary medicine; degree, B. S. in agriculture at the end of four years, D. V. M. at the end of six years.

Collegiate courses—Continued.
Division of Engineering:
Four-year curricula—
Agricultural engineering; degree, B. S. in Agricultural Engineering.
Architecture; degree, B. S. in Architecture.
Civil engineering, degree B. S. in Civil Engineering.
Electrical engineering; degree, B. S. in Electrical Engineering.
Flour-mill engineering; degree, B. S. in Flour-mill Engineering.
Mechanical engineering; degree, B. S. in Mechanical Engineering.
Division of Home Economics:
Four-year curriculum—Home Economics; degree, B. S. in Home Economics.
Division of General Science:
Four-year curricula—
General science; degree, B. S.
Industrial journalism; degree, B. S. in Industrial Journalism.
Agricultural chemistry; degree, B. S. in Agricultural Chemistry.
Biochemistry; degree, B. S. in Biochemistry.
Industrial journalism; degree, B. S. in Industrial Journalism.
Division of Veterinary Medicine:
Four-year curriculum—Veterinary medicine; degree, D. V. M.
Six-year curriculum—Animal husbandry and veterinary medicine; degree B. S. in agriculture at end of four years; D. V. M. at end of six years.

Graduate work.
Admission: Bachelor's degree from a recognized college.
Degrees: M. S. or M. S. in specific lines. One year of graduate work.

Expenses:
Tuition, none.

Matriculation fee, residents of Kansas	$5.00
Matriculation fee, nonresidents of Kansas	10.00
Incidental fee, per semester, residents of Kansas	5.00
Incidental fee, per semester, nonresidents of Kansas	10.00
Sick-benefit fee, per semester	1.00
Laboratory fees, per semester	1.00–7.50
Room, per month (outside of college)	10.00–16.00
Board, per week	5.00–7.00

Faculty, 180.

Students, 1,621, of which 8 are from foreign countries, as follows: Philippines, 1; Mexico, 1; Greece, 1; Russia, 1; China, 1; Cuba, 1; Brazil, 2.

Of special interest to foreign students.—The college is located toward the eastern part of the great Middle West, and is the largest producer of hard winter wheat of any State in the Union. It is also one of the largest producers of alfalfa and Indian corn. Large areas are devoted to the pasturage of beef and dairy cattle, and swine are produced with the highest degree of success. The college is well equipped and manned for giving instruction in these major lines of agricultural activities. Its herds of beef cattle and dairy cattle of all the standard breeds are among the best in the United States.

The science departments of the institution are well equipped and offer excellent opportunities for study and research in plant pathology, entomology, zoology, genetics, bacteriology, and chemistry.

Very good facilities are available for instruction in all of the usual branches of engineering. Especial attention is also given to highway engineering and to flour-mill engineering and milling.

UNIVERSITY OF KANSAS; Lawrence, Kans., a State institution. Date of first opening, 1866; coeducational.

College of Liberal Arts and Sciences. Undergraduate.
  Admission: 15 units; 12 prescribed—3 English, 2½ mathematics, 3 foreign language, 1 physical science, 1 biological science, 1 history and political science.
  Degrees:
    A. B. and B. S.—Four-year courses.
    B. S. in Medicine—Four-year course, two in college and two in School of Medicine.

Graduate School.
  Admission: Bachelor's degree from an institution of recognized standing.
  Degrees:
    A. M. and M. S.—One year of resident graduate work; thesis.
    Ph. D.—Three years of resident graduate work; thesis.
    C. E., Mech. E., Chem. E., E. M., Elec. E., conferred on graduates in engineering, after three years of professional engineering service in positions of responsibility, and the presentation of a thesis.

School of Engineering.
  Admission: 15 units; 9 prescribed—3 English, 3 mathematics, 2 foreign language, 1 physical science.
  Degrees:
    B. S. in Engineering—Four-year course.
    B. S.—Five-year course.

School of Fine Arts.
  Admission:
    To baccalaureate and public school music or art courses, 15 units, as for College of Liberal Arts and Sciences.
    To artists' and teachers' certificate courses, 12 units and, in the music department the requirements prescribed for baccalaureate courses.
  Degrees:
    B. Mus.—Four-year course.
    B. Painting—Four-year course.
    Artist's Certificate—Four-year course.
    Teacher's Certificate—Three-year course.
    Public School Music Certificate—Two-year course.
    Public School Art Certificate—Two-year course.

School of Law.
  Admission: Four-year high school course and 30 hours (one year) of college work. (After 1919–20, two years of college work will be required.)
  Degree: LL. B.—Three-year course.

School of Pharmacy.
  Admission: 15 units, as for College of Liberal Arts and Sciences.
  Degrees:
    Ph. G.—Two-year course.
    Ph. C.—Three-year course.
    B. S.—Four-year course.

School of Medicine.
  Admission: Sixty hours (two years) in College of Liberal Arts and Sciences of the University of Kansas, or the equivalent.
  Degree: M. D.—Four-year course.

School of Education.

Admission: To baccalaureate course or to course leading to the University Teacher's Diploma, completion of approved four-year high-school course and 60 hours (two years) of college work.

Degree: B. S. in Education—Four-year course.

University Teacher's Diploma—Granted to graduates of the College of Liberal Arts and Sciences, and those receiving degree from Graduate School, on satisfaction of certain prescribed requirements. The diploma qualifies the holder for a Kansas State teacher's certificate.

Expenses:

Tuition, none.

Matriculation fee (all schools)—	
Residents of Kansas	$5
Nonresidents of Kansas	10
Incidental fee—	
Graduate School, College, School of Engineering, and School of Medicine—	
Residents of Kansas	10
Nonresidents of Kansas	20
(No incidental fee charged in School of Fine Arts.)	
Schools of Pharmacy, Medicine, and Law—	
Residents of Kansas	25
Nonresidents of Kansas	35
Health fee	3
Board, per week	7
Room, per month	4–15

Faculty, 290.

Students, 3,762, of whom 24 are from foreign countries, as follows: Bulgaria, 1; Canada, 1; Czechoslovakia, 1; England, 2; Germany, 1; Philippine Islands, 9; Poland, 1; Russia ,7; Switzerland, 1.

LOUISIANA STATE UNIVERSITY, Baton Rouge, La., a city of 21,782 inhabitants, 90 miles from New Orleans, a city of 387,219 inhabitants. Founded, 1860; a "land-grant" institution; coeducational.

Undergraduate departments.

Admission: 16 units; 8½ prescribed—3 English, 2½ mathematics, 2 foreign language, 1 history. Requirements are uniform in all undergraduate departments, except the College of Agriculture, where the foreign language is not prescribed.

Degrees:

Arts and sciences	B. A.—4 years.
Teachers College	B. A.—4 years, B. S.—4 years.
Agriculture	B. S.—4 years.
Engineering	B. S.—4 years.
Audubon Sugar School	B. S.—5 years.
Law School	LL. B.—3 years.
Graduate Department	M. A., E. E.—1 or 2 years; M. S., M. E., C. E., Ch. E.

Expenses:

Tuition (free to citizens of the United States)	$150
Board, at university, per month	14
Room, at university, per month	2
Board and room, outside university, per month	18–30

Faculty, 84.

Students, 886, of whom 26 are from foreign countries, as follows: Costa Rica, 1; China, 5; Philippines, 2; Brazil, 4; Peru, 4; Japan, 1; Cuba, 2; Mexico, 1; Porto Rico, 4; Salvador, 2.

Of special interest to foreign students.—The Audubon Sugar School, which is the only institution of its kind in America, is excellently equipped, and offers a course for training sugar experts. It includes chemistry, agriculture, mechanical engineering, sugar making, study and design of sugar-house machinery, sugar chemistry, analysis, and special agriculture of the sugar cane. Practical work in the fields and sugar house, at the university sugar experiment station, is required during two full sugar seasons, and properly qualified students may, in their fifth year, receive appointments for the season at standard salaries as assistant chemists and engineers. The library is ample and the material equipment, including a sugar house, fields of cane, and laboratories, is valued at about $100,000.

On account of the similarity of the law systems of the State of Louisiana and the Spanish-American countries—the main differences between the Louisiana and Spanish codes are differences of detail rather than of fundamental principles—the work of the Law School should prove of interest to students from those regions.

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La., a city of 387,219 inhabitants. Founded, 1834.

College of Arts and Sciences.

Admission: 15 units. For B. A. degree, 11 prescribed—3 English, 3 mathematics, 3 Latin, and either 2 Greek or 1 history, and 1 science. For B. S. degree, 12 prescribed—3 English, 3 methematics, 2 foreign language, 2 science, 2 history. (For 2 science, 1 mathematics, and 1 foreign language may be substituted.)

Degrees: B. A., B. S.—Four-year courses.

College of Technology.

Admission: 15 units; 10 prescribed—3 English, 3 mathematics, 2 foreign language, 2 science. (For 2 science, 1 mathematics, and 1 foreign language may be substituted.)

Degrees:

B. Arch.—Four-year course.

B. E.—Four-year course in the departments of mechanical and electrical engineering, civil engineering, or chemical engineering. (The diploma will indicate the particular course taken.)

H. Sophie Newcomb Memorial College (for women only).

Admission: 15 units. For B. A., 11½ prescribed—3 English, 2½ mathematics, 5 foreign language, 1 science. (For the equivalent in foreign language, 2 history may be substituted.) For B. A. in Education, 8½ prescribed—3 English, 2½ mathematics, 2 foreign language, 1 science. For B. Des. (Bachelor of Design), 8½ prescribed—3 English, 2½ mathematics, 2 foreign language, 1 drawing. For B. Mus., 7½ prescribed—3 English, 2½ mathematics, 2 foreign language.

Degrees:

B. A., B. A. in Education—Four-year courses.

B. Des.—Four years in School of Art.

B. Mus.—Four years in School of Music.

Diplomas are granted in art, music, and household economy, upon completion of shorter courses.

Faculty of Graduate Studies.
Admission: Bachelor's degree from a recognized college.
Degrees:
M. A., M. S.—One year of postgraduate study; thesis.
Ph. D.—Three years of postgraduate study; thesis.
M. E., C. E., Chem. E., E. E.—Either one-year resident postgraduate study and thesis, or two years professional work in absentia and thesis.
M. Arch.—Two years of resident postgraduate study; thesis.

School of Medicine.
Admission: Two years of collegiate work, including biology, chemistry, physics, and a modern language other than English.
Degree: M. D.—Four-year course.

School of Dentistry.
Admission: 15 units: 7½ prescribed—3 English, 2½ mathematics, 2 foreign language.
Degree: D. D. S.—Four-year course.

School of Pharmacy.
Admission: 12 units; 5½ prescribed—3 English, 2½ mathematics.
Degrees:
Ph. G.—Two-year course.
Ph. C.—Three-year course.
Pharm. D.—One year after Ph. C.

College of Law.
Admission: One year of collegiate work, including English, English history, mathematics, and Latin or French.
Degree: LL. B.—Three-year course.

Expenses:

Tuition—	
Colleges of Arts and Sciences, and Technology	$100
Newcomb College (for women)	150
College of Law	115
School of Dentistry	150
School of Medicine	150–180
School of Pharmacy	70
Graduate School	20
Board and room, at university	150–175
Board and room, at Newcomb	300
Board and room, outside university, per month	25–35
Total annual expense, approximated	350–600

Faculty, 329.

Students, 1,789 (excluding summer school), of whom 37 are from foreign countries.

Of special interest to foreign students.—The medical school is of high grade, and its location in a city of the size of New Orleans insures excellent clinical facilities. The postgraduate school provides special opportunities for advanced study and research, while the course in tropical medicine should attract students from southern countries. It consists of lectures and demonstrations, laboratory periods, and clinics, and considers in turn diseases due to physical and chemical agencies, to vegetable and animal parasites, and those of unknown causation. Three laboratories are devoted especially to this work, one of which is set aside for graduate study and research, and the hospital facilities are probably unexcelled in the United States.

Owing to the similarity of the Louisiana Code to that of the Spanish-American countries, the course in law at Tulane University should be of interest to students from those localities.

The sugar engineering course of the College of Technology differs from any other given in the United States. It trains students to design and erect sugar factories and to take charge as general superintendents of their chemical and mechanical operations. The industrial chemical engineering course gives training in applied industrial chemistry as well as mechanical instruction in the design of chemical manufacturing plants. Special attention is given to reinforced concrete and structural design, irrigation and drainage. A combined course in mechanical and electrical engineering is also given.

The university is open to white students only.

GOUCHER COLLEGE, Baltimore, Md., a city of 733,826 inhabitants; near Washington, D. C., capital of the Nation, a city of 437,571 inhabitants. Founded, 1885, for women only.

Admission: 15 units; 3 prescribed in English. Examinations in English or history; a foreign language, ancient or modern; mathemetics or science; and one of above subjects not otherwise chosen.

Degree: A. B.—Four-year course.

Expenses:

Tuition	$175
Board	240
Room	100

Faculty, 60.

Students, 712, of whom 3 are from foreign countries, as follows: China, 1; France, 2.

JOHNS HOPKINS UNIVERSITY, Baltimore, Md., a city of 733,826 inhabitants, 40 miles from Washington, the capital of the Nation. Founded, 1867.

Undergraduate courses.

Under the Faculty of Philosophy (College of Arts and Sciences).

Admission: Secondary school record showing work in English, foreign languages, mathematics, history, and science. Examination in these subjects. Certificates may be accepted in lieu of examination. Fifteen units; 10½ prescribed, including 1½ algebra, 1 plane geometry, 3 English, 4 foreign language, 1 history.

Degree: A. B.—Four years.

Under the Department of Engineering.

Admission: As for College of Arts and Sciences. Elective units may include 1 in mechanical drawing.

Degrees: B. E. and B. S. in Chemistry—Four years.

Under the Faculty of Hygiene (coeducational).

Admission: Completion of at least two years of college work, including courses in biology, physics, inorganic and organic chemistry.

Degree: B. S. in Hygiene—Two years.

Graduate courses (coeducational).

Under the Faculty of Philosophy.

Admission: Bachelor's degree from recognized college.

Degrees:

A. M.—Two years' postgraduate study; essay.

Ph. D.—Three years' postgraduate study; dissertation.

Graduate courses (coeducational)—Continued.

Under the Faculty of Medicine (coeducational).

Admission: Bachelor's degree from recognized college, or knowledge equivalent to that implied by such a degree, including work in Latin, French, and German, biology, chemistry, and physics.

Degree: M. D.—Four years' postgraduate work.

Under the Department of Engineering.

Admission: Bachelor's degree from a recognized college.

Degrees:

Master of C. E., Master of E. E., Master of M. E.—Two years' postgraduate study.

Ph. D.—Three years' postgraduate study; dissertation.

Under the Faculty of Hygiene.

Admission: Bachelor's degree from recognized college; degree of M. D. also required of candidates for D. P. H.

Degrees:

D. P. H.—Two years' work following M. D.; essay.

D. Sc. in Hygiene—Three years' work subsequent to bachelor's degrée; dissertation.

Expenses:

Tuition	$150
Tuition in the Medical School and the School of Hygiene	250

Board, $5 a week and upward.

Rooms, $2 a week and upward.

Faculty, 290.

Students, 1,130, of whom 29 are from foreign countries, as follows: Japan, 7; China, 6; Canada, 5; Brazil, 2; Bolivia, 1; Guatemala, 1; Mexico, 1; Panama, 1; Peru, 1; Trinidad, 1; Philippines, 2; Porto Rico, 1.

Of special interest to foreign students.—From its foundation Johns Hopkins has been primarily devoted to graduate study and is the pioneer in that field in this country. The university is one of the very few in the United States requiring two years instead of one for the master's degree.

The medical school stands in the front rank among the schools of the country. Close connection between the university and the Johns Hopkins Hospital and dispensary offers excellent clinical facilities and makes possible the emphasis placed upon laboratory and hospital training. Members of the graduating class receive appointments as resident house officers in the hospital.

The Department of Engineering, opened in 1913, is characterized by the same thoroughness and excellence of standards as are the other departments of the university. Graduate and undergraduate work is now offered in civil, electrical, and mechanical engineering and chemistry, and a liberal appropriation insures complete equipment and every facility for the new laboratories and buildings.

The School of Hygiene and Public Health was opened in the autumn of 1918. Courses have been established for the training of qualified persons for public health work, and to promote investigative work in hygiene and preventive medicine and provide opportunities for the training of investigators in these subjects, and to develop adequate means for the dissemination of sound hygienic knowledge. Special and mutual advantages arise from the close relationship between the school and the International Health Board of the Rockefeller Foundation, particularly in field work and in the opportunities for investigation and training in tropical medicine and the control of special diseases.

The university provides 5 scholarships, yielding free tuition, for students from Latin-American countries who wish to pursue graduate courses, and 5 for students (graduate or undergraduate) from France.

AMHERST COLLEGE, Amherst, Mass., a town of 5,550 inhabitants. Founded, 1821; for men only.

Admission: 15 units; 13 (or 12) prescribed—3 English, 1 history, 4 Latin (or 3 Greek), 3 mathematics, 2 modern language.

Degrees:

B. A.—Four-year course.

M. A.—One year of postgraduate study and a thesis, for those holding a bachelor's degree from a recognized college.

Expenses:

Tuition	$150.00
(Beginning with 1920, $200.)	
Board, per week	7.00–9.00
Room, per college year	42.50–112.50
Total annual expense	500.00–650.00

Faculty, 52.

Students, 503, of whom 4 are from foreign countries.

CLARK UNIVERSITY and CLARK COLLEGE, located at Worcester, Mass., a city of 179,754 inhabitants.

The university and the college, although separate institutions with separate faculties, are under the control of the same board of trustees and use the same buildings and equipment.[a]

The University: Founded, 1887; coeducational; offers instruction in eight graduate departments only.

Admission: Bachelor's degree from a recognized college, or the equivalent.

Degrees:

A. M.—At least one year of postgraduate study; thesis.

Ph. D.—At least one year, but in most cases three years of postgraduate study; thesis.

Faculty, 25.

Students, 90, of whom 8 are from foreign countries, as follows: Japan, 3; China, 3; Egypt, 1; Belgium, 1.

The College: Founded, 1902.

Admission: Graduation from a recognized secondary school with 15 units credit. In cases of exceptional ability, 14 units may be accepted.

Degree: A. B.—Three-year course.

Faculty, 24.

Students, 156, of whom 3 are from foreign countries.

Expenses:

Tuition—	
College	$50
University	100

Board, college dining hall, $6 a week.

Room, $1.50 to $3 a week.

Total annual expenses, $300 and upward.

Of special interest to foreign students.—The university is strictly a graduate school. It is devoted primarily to research, secondarily to the training of investigators and teachers. For both these ends it emphasizes the importance of close personal relations between professors and students. Its small student body and large teaching staff have enabled it to foster these relations.

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[a] Reorganized as one institution (Clark University) in 1920.

Especially noteworthy, both on account of the eminence of the instructors and the comprehensiveness of the courses, is the work in education, under which head is included instruction in psychology and pedagogy. The university is one of the few in the country to possess an excellently equipped pedagogical museum. A children's institute provides special facilities for various branches of child study.

Clark College is the only college mentioned in this bulletin which regularly grants the A. B. in three years. It seeks to do this without lowering the standard of the degree by requiring a greater amount of work of each student weekly, by the exclusion of extraneous activities (such as intercollegiate athletics) which make large demands on the students' time, by maintaining a relatively large faculty, and by the immediate dismissal of all students who can not maintain the required pace.

The library, used jointly by university and college, is exceptional in equipment and administration. It is maintained by an ample separate endowment which permits the purchase of any book needed for any investigation.

HARVARD UNIVERSITY, Cambridge, Mass., a city of 109,694 inhabitants, adjoining Boston, 748,060 inhabitants. Founded in 1636, it is the oldest American university.

Harvard College, undergraduate department of arts and sciences.

Admission: 16½ units, by examination. Two plans.

1. Examinations in all subjects; 11½ or 12½ units prescribed for A. B. course—3 English, 2 Greek or 3 Latin, 2 modern languages, 2½ mathematics, 1 history, 1 science. 10½ units prescribed for S. B. course—3 English, 3 modern languages, 2½ mathematics, 1 history, 1 science.
2. Secondary school record showing work in languages, science, mathematics, and history. Examinations in English, a foreign language, mathematics or science, and one other subject.

Degrees: A. B. and S. B.

Graduate School of Arts and Sciences.—Advanced instruction in the arts and pure science.

Admission: Bachelor's degree from recognized college.

Degrees:

A. M.—At least one year of approved postgraduate study, completed with distinction.

Ph. D.—At least two years of advanced study; a thesis; examinations. "The requirements of time for the degree of doctor of philosophy are wholly secondary."

Engineering School.—Including mechanical, electrical, civil, and sanitary engineering, mining, metallurgy, and industrial chemistry. Undergraduate and graduate courses.

Admission: By examination, same as for Harvard College.

Degrees:

S. B. (in Mechanical Engineering, in Electrical Engineering, in Civil Engineering, in Sanitary Engineering, in Mining, in Metallurgy, in Industrial Chemistry).

S. M. (in Mechanical Engineering, in Electrical Engineering, in Civil Engineering, in Sanitary Engineering, in Industrial Chemistry; also Mining Engineer, and Metallurgical Engineer)—one year of graduate technical study beyond the requirement for the degree of Br of Science.

S. D.—Requirements same as for Ph. D.

Graduate School of Business Administration. Scientific instruction in principles of business organization and administration and in specialized branches of modern business.

Admission: Bachelor's degree from recognized college.

Degree: M. B. A.—Two years of postgraduate study; thesis.

Divinity School.

Admission: A. B. or equivalent.

Degrees:

S. T. B.—Three-year course.

S. T. M.—One year of advanced study after taking S. T. B.

Th. D.—Not less than two years of advanced study; thesis; examination.

Law School.

Admission: Bachelor's degree from recognized college.

Degrees:

LL. B.—Three-year course.

S. J. D.—One year of advanced study after taking LL. B.

Medical School.

Admission: Collegiate degree, or two years of collegiate work, showing rank in first third of class.

Degrees:

M. D.—Four-year course.

D. P. H.—One year's study after taking M. D.

Graduate School of Medicine.

Admission: M. D.

Graduate Schools of Architecture and Landscape Architecture.

Admission: Bachelor's degree from recognized college.

Degrees: M. Arch. and M. L. A.

Graduate School of Applied Biology (Bussey Institution of Applied Biology).

Admission: Bachelor's degree from recognized college.

Degrees:

S. M. and M. F.—Two-year courses.

S. D.—Requirements same as for Ph. D.

Dental School.

Admission: Graduation from secondary school, if course has included required subjects.

Degree: D. M. D.—Four-year course.

School for Health Officers.

Admission: Bachelor's degree from recognized college, or M. D., or qualifications satisfactory to the Administrative Board.

Certificate: C. P. H.

Miscellaneous:

Arnold Arboretum.

Astronomical Observatory.

Museums of Zoology, Ethnology, Archæology, etc.

Botanical Garden.

Gray Herbarium.

Library.

Expenses:

Tuition in Harvard College and graduate schools	$150
In medical school	225
In dental school	200–150
Bond from students in Harvard College and graduate students	400
Bond from students in medical and dental schools	50
Rooms in dormitories	50–200

Board at Memorial Hall, $7 per week.
Board at Foxcroft Hall, a la carte.

Faculty, 803.[90]

Students, 5,407,[90] of whom 148 are from foreign countries.

Radcliffe College. Affiliated with Harvard University. Admits women only.

- Undergraduate Department—
  - Admission: As in Harvard College.
  - Degree: A. B.—Four-year course.
- Graduate Department—
  - Admission: Bachelor's degree from a recognized college.
  - Degrees:
    - A. M. Requirements same as in Harvard College.
    - Ph. D. Requirements same as in Harvard College.

Expenses:

Tuition	$200
Board	216
Room	72–324

Faculty, 122.[90]

Students, 568,[90] of whom 7 are from foreign countries.

Of special interest to foreign students.—Harvard College offers exceptional advantages for undergraduate study because of the strong graduate schools included in the university, and because of the fact that many of the most distinguished scholars connected with these schools also give instruction to undergraduate students.

The schools of engineering, architecture and landscape architecture, and forestry are strictly graduate schools, and therefore demand a more extended general and special training than is usually required to secure degrees in these departments.

The medical school occupies a new spacious and magnificently equipped group of buildings in Boston within easy reach of the hospitals affiliated with it. Clinical instruction is given at 17 hospitals, dispensaries, and infirmaries. This number includes the largest State and city institutions. "About 80 appointments as internes and assistants are made annually to hospitals in and about Boston for terms of service varying from six months to two years." Almost every graduate may receive one of these appointments.

The school for health officers, conducted by Harvard University and the Massachusetts Institute of Technology in cooperation, prepares young men for administrative positions as health officers, members of boards of health, secretaries, agents, or inspectors of health organizations. The subjects embraced in the course include medical, biological, hygienic, and engineering sciences, together with practical health administration.

The Graduate School of Arts and Sciences is one of the best equipped graduate schools in the country. The following departments are especially noteworthy by reason of the outstanding eminence of the professors connected with them, or because of exceptional material equipment: Astronomy, biology, botany, chemistry, comparative literature, economics and sociology (called social ethics), education, English language and literature, Germanic languages and literature, history and government, philosophy and psychology, Romance languages and literatures.

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[90] Figures for 1915–16.

MASSACHUSETTS AGRICULTURAL COLLEGE, Amherst, Mass., a town of 5,550 inhabitants. A "land-grant" institution, incorporated in 1863; coeducational.

Undergraduate course, 4 years.

Admission: 14 units; 8½ prescribed—2½ mathematics, 3 English, 2 modern languages, 1 history.

Degree conferred.—B. S.

Work for all during the first two years is practically the same. In the third term of sophomore year, the student selects one subject (agriculture, agronomy, animal husbandry, dairying, poultry husbandry, floriculture, forestry, landscape gardening, vegetable gardening, pomology, agricultural chemistry, economic entomology, rural sociology, agricultural economics, microbiology, plant physiology, and pathology, agricultural education, rural journalism) in which he wishes to specialize. In this and correlated subjects almost all the work of his final two years will lie.

Graduate School:

Admission: Bachelor's degree from a recognized college.

Degrees conferred:

M. S.; M. S. Agr.; M. L. A. (Master of Landscape Architecture)—1½ years' graduate study in 2 subjects; thesis; examination.

Ph. D. Agr.—Three years' graduate study in 3 subjects; thesis; examinations.

Expenses:

Tuition (free to residents of Massachusetts), nonresidents of Massachusetts	$60
Tuition to foreigners	120
Room	39-100
Board (college dining hall) per week	6
Total annual expense	325-400

Faculty, 67.

Students, 384, of whom 3 are from foreign countries, as follows: China, 1; India, 1; Japan, 1.

Of special interest to foreign students.—Equipment for work in entomology is especially complete. It includes a library, a new fireproof entomological and zoological building with laboratories, museums, and lecture rooms; an eight-room building for instruction in bee-keeping; and an apiary with 50 colonies of bees.

The course in pomology includes practical, systematic, and commercial pomology, with a course in spraying. For this work the college possesses 20 acres of orchard.

Strong courses are offered in plant physiology and pathology, horticulture, agricultural chemistry, plant breeding, floriculture, landscape gardening, market gardening, agricultural economics, rural sociology, farm administration, dairying, microbiology, poultry husbandry, and agricultural education.

Especially attractive courses are offered in the graduate school by practically all departments.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass., a city of 109,694 inhabitants, adjacent to Boston. Incorporated, 1861; coeducational.

Undergraduate courses:

Admission: Examination. Prescribed subjects: Algebra, plane and solid geometry, trigonometry, physics, French or German, English, and history. Evidence of satisfactory work in two electives, selected from a number of subjects, or one continued throughout two years. Students from countries where a language other than English is spoken are in most cases allowed to substitute their own language for either French or German.

Four-year courses are offered in civil engineering, mechanical engineering, mining engineering and metallurgy, architecture (including architectural engineering), chemistry, electrical engineering, biology and public health, physics, general science, chemical engineering, sanitary engineering, geology (including geological engineering), naval architecture and marine engineering, electrochemical engineering, and engineering administration.

Five-year undergraduate courses are offered for those who wish to combine two related courses, to add to their strictly professional studies work of a more general nature, or to distribute the work of a regular four-year course over five.

Special summer work is required between the first and second years in chemistry and chemical engineering and between the second and third years in civil and sanitary engineering, mining, and metallurgy. In connection with various departments, students are given special facilities during the summer to engage in field work or to visit and report on mines or industrial establishments.

A thesis, original report, or design is required at the completion of any course.

Degree: B. S.

Graduate courses:

Admission: Bachelor's degree from a recognized college or scientific school.

Degrees:

M. S.—One year of postgraduate study if previous work is equivalent to Institute's undergraduate courses; thesis.

Ph. D.—Three years of postgraduate study and research, mainly in general science.

Doctor of Engineering.—Three years of postgraduate study and research, mainly in engineering subjects.

School for Health Officers, a joint establishment of Harvard University and the Institute, to train students for public-health work.

Admission: Bachelor's degree from a recognized college, or M. D.

Certificate: C. P. H.

Expenses:

Tuition	$300
Board and room, per week	9–12
Laboratory breakage deposit	15–50

Faculty, 146 professors, 185 other members educational staff.

Students, 2,000, of whom 150 are from foreign countries.

Of special interest to foreign students.—Nearby are the Boston libraries; the manufacturing district in which the institute is situated offers unus opportunities for observation and practical work.

The proportion of foreign students is about 7 per cent of the total registration, the highest proportion among the large colleges of the country.

After 50 years on its original site in Boston, the Institute in 1916 moved all its departments except that of architecture to a location in Cambridge, across the Charles River from Boston. It has expended more than eight and a half million dollars in the development of its new plant. Its laboratories of steam, electrical, hydraulic, and gas engineering, and of testing materials are unexcelled, having been built after a careful examination of the best laboratories in various parts of the world. It has also large laboratories of physics, chemistry, and biology.

In 1918–19 the registration was 2,000, there being over 200 in each of the departments of civil, mechanical, electrical, and chemical engineering, and engineering administration, and 1,600 students in all the engineering departments.

The work in naval architecture and marine engineering is facilitated by the proximity of the institute to the navy yard and the Fore River Shipyard. Courses in this department include a study of mechanism, thermodynamics, applied mechanics, hydraulics, heat engineering, steam turbines, and marine engineering. For the past 18 years the U. S. Navy Department has sent graduates of the Naval Academy to this school for special training in naval construction. Both the Army and the Navy have detailed officers to study aeronautical engineering at this institute. The aerodynamical laboratory provides unusual facilities for research and experiment in this subject.

For students in architecture there are two options: (1) General architecture with emphasis upon design and art, and (2) architectural engineering with emphasis upon structural design and engineering.

The graduate course in aeronautical engineering includes theoretical dynamics of rigid bodies and fluids and the general theory and design of aircraft.

There are well-equipped research laboratories in applied chemistry, physical chemistry, biology, and the various special branches of engineering (including aerodynamics).

MOUNT HOLYOKE COLLEGE, South Hadley, Mass., a town of 5,527 inhabitants. Founded, 1836; for women only.

Admission: 15 units, 11 prescribed; 3 English, 1 history, 4 Latin, 3 mathematics.

Degrees:

A B.—Four-year course.

A. M.—One year of postgraduate study for those holding the bachelor's degree from a recognized college. A thesis in the major subject is usually required.

Expenses:

Tuition	$175
Board and room	325
Total annual expense, including laboratory fees and incidentals	575

Faculty, 99.

Students, 874, of whom 8 are from foreign countries, as follows: China, 6; France, 1; Japan, 1.

SIMMONS COLLEGE, Boston, Mass., a city of 748,060 inhabitants. Opened, 1902.

Admission: 15 units, 9 prescribed—3 English, 3 foreign language, 2 mathematics, 1 history. Two restricted to foregoing subjects and science, 4 free margin.

Degrees:

B. S.—Four-year courses in household economics, secretarial studies, library science, general science, social work, education for store service, public health nursing.

M. S.—One year of postgraduate study after B. S. Certificates are granted to students completing short courses in any of the departments mentioned above, or in that of industrial teaching.

Expenses:

Tuition	$150
Board and room	275–350
Total annual expense	415–500

Faculty, 130.

Students, 1,011, of whom 11 are from foreign countries.

Of special interest to foreign students.—Simmons offers, to women only, thorough courses, combining both professional and cultural studies, and aiming to fit the student to earn an independent livelihood.

In addition to the regular four-year programs there are one-year and two-year courses, designed for college graduates, which lead to the bachelor's degree, and also courses of one year for students who are not candidates for a degree. In all departments the curricula are largely prescribed and emphasis is placed upon the practical side of the work.

SMITH COLLEGE, Northampton, Mass., a city of 21,951 inhabitants. Founded, 1871, for women only.

Admission (undergraduate work): 14½ units; 10½ prescribed—3 English, 2½ mathematics, 1 history, 4 Latin or Greek.

Degree: A. B.—Four-year course.

Admission (graduate work): Bachelor's degree from a recognized college.

Degrees:

A. M.—One year of postgraduate work. Also conferred upon Smith graduates for work done in absentia after three years and the presentation of thesis.

Ph. D. (rarely conferred).—Three years' postgraduate study; thesis.

Expenses:

Tuition	$200
Board and room, at college	350
Board and room, away from college, per week	8–17

Faculty, 181.

Students, 2,107, of whom 16 are from foreign countries, as follows: Canada, 9; China, 3; France, 2; England, 1; Ecuador, 1.

Of special interest to foreign students.—A fund of $7,500 has recently been donated by the class of 1890 to establish the Latin-American scholarship of the class of 1890. This will yield from $337.50 to $375 a year. Preference in the award of the scholarship will be given to deserving candidates from Latin-American countries.

TUFTS COLLEGE, Medford, Mass., near Boston, a city of 748,060 inhabitants. Founded, 1852.

School of Liberal Arts. Undergraduate.

Admission: 15 units; 8½ prescribed—3 English, 2 foreign language, 1 history, 2½ mathematics.

Degrees:

A. B. and B. S.—Four-year courses.

B. S. in Chemistry.—Four-year course.

Engineering School.

Admission: 14 units; 9 prescribed—3 English, 2 foreign language, 1 history, 3 mathematics.

Degree: B. S.—Four-year courses in civil, structural, mechanical, electrical, and chemical engineering.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees: M. A. and M. S.—One year of postgraduate study; thesis.

Crane Theological School (Universalist).

Admission: As in School of Liberal Arts.

Degree: B. D.—Five-year course. This degree is also conferred upon students who have obtained a bachelor's degree from a recognized college and complete a three-year course in the theological school.

Jackson College. An undergraduate college for women equivalent to the School of Liberal Arts.

Admission: 15 units, as in the School of Liberal Arts.

Degrees: A. B. and B. S.—Four-year courses.

Medical School (Boston).

Admission: Two years' collegiate work, including physics, chemistry, biology, and German or French.

Degree: M. D.—Four-year course.

Dental School (Boston).

Admission: 14 units; 8½ prescribed—3 English, 2 foreign language, 1 physics, 2½ mathematics.

Degree: D. M. D.—Four-year course.

Expenses:

Tuition—

School of Liberal Arts, Jackson College	$125
Graduate School	100
Crane Theological School (including room)	100
Medical and Dental Schools	150
Engineering School	175
Board at College, $5 a week.	
Room at college	25–80
Board and room at Boston, $5.50 to $7 a week.	
Total annual expense	350–450

Faculty, 262.

Students, 1,645, of whom 33 are from foreign countries, as follows: Canada, 16; China, 4; England, 3; British West Indies, 2; Turkey, 2; Mexico, 1; Sweden, 1; Portugal, 1; Bermuda, 1; Germany, 1; British Guiana, 1.

Of special interest to foreign students.—The Dental School is well equipped, and its location in a city of the size of Boston assures excellent clinical facilities.

A four-year course in chemistry leading to the degree of B. S. fits men for positions of responsibility in industrial chemistry.

The School of Engineering offers courses in civil, structural, electrical, mechanical, and chemical engineering. In all departments the work of the first two years is the same, and aims to give the student a strong scientific foundation for work in his chosen field, and as liberal an education as possible. Advanced and technical study in the different fields of engineering begins in the third year.

WORCESTER POLYTECHNIC INSTITUTE, Worcester, Mass., a city of 179,754 inhabitants. Founded, 1865.

Undergraduate Department:

Admission: Graduation from a recognized secondary school, including work in English, algebra, plane and solid geometry; history, two foreign languages (one of which must be French or German), chemistry, or physics.

Degree: B. S.—Four-year course; thesis.

Graduate Department:

Admission: Bachelor's degree from a recognized college.

Degrees:

M. S.—One year postgraduate study; thesis.

Sc. D.—Three years' postgraduate study; thesis.

M. E., E. E., C. E., Ch. E.—One year postgraduate study; thesis.

These degrees may also be conferred upon graduates of the institute who have had three years' professional experience, including responsible charge of work in that line for which the degree is to be given, and who present a thesis.

Expenses:

Tuition	$150
Laboratory and gymnasium fees	20
Board and room, $6 a week and upward.	
Total annual expense	500-600

Faculty, 44.

Students, 474, of whom six are from foreign countries, as follows: Chinese, 2; Korean, 1; South America, 3.

Of special interest to foreign students.—Strong courses are offered in mechanical, civil, and electrical engineering, chemistry, and general science. The institute lays especial emphasis upon practice work. It was the first institution in the country to establish workshops in connection with courses in engineering. These supplement the well-equipped laboratories. The shops are run under commercial conditions, with a permanent staff of employees, affording the student valuable training in scientific management. Instruction in electrical engineering design and electric railway engineering is offered in the department of electrical engineering.

MICHIGAN COLLEGE OF MINES, Houghton, Mich., a town of 4,466 inhabitants. Founded, 1885.

Admission: 15 units, 9 prescribed—3 English, 2 mathematics, 1 physics, 2 foreign language.

Degree: E. M.—Four-year course. If the student attends the summer session it is possible to fulfill the requirements in three calendar years. A candidate may, upon application, receive the B. S.

Expenses:

Tuition, residents of Michigan	$25
Tuition, nonresidents of Michigan	150
Minimum annual expense	550
Board and room, $30 a month and upward.	

Faculty, 23.

Students, 140, of whom 6 are from China.

Of special interest to foreign students.—The college gives courses in metallurgy; mechanical, electrical, civil, and mining engineering; ore dressing; geology and mineralogy; and technical writing. The location of the college makes possible practical work in copper and iron mining.

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich., a city of 19,516 inhabitants. Founded, 1837; coeducational.

College of Literature, Science, and the Arts. Undergraduate.

Admission: 15 units, 8 prescribed—3 English, 2 foreign language, 2 mathematics, 1 science.

Degrees:

A. B.—Four-year course. A student who has completed half this work in mathematics and the physical and biological sciences may, if he desires, receive the degree B. S.

Special course in landscape design, 5 years. (B. S. or A. B. at end of fourth year. M. L. D. at end of fifth year.)

B. S. in Chemistry.—Four-year course specializing in chemistry.

B. S. in Forestry.—Four-year course in forestry.

Colleges of Engineering and Architecture.

Admission: 15 units; 11½ or 12 prescribed—3 English, 3 mathematics, 1 physics, 1 history, 2 foreign language, 1½ or 2 to be selected from the following: Chemistry 1, trigonometry ½, French or German 1 or 2, Greek or Latin 1 or 2, manual training 1.

Degrees:

B. S. in Engineering.—Four-year course.

B. S. in Architecture.—Four-year course.

Medical School.

Admission: Two years' collegiate work.

Degree: M. D.—Four-year course.

Law School.

Admission: Two years' collegiate work.

Degrees:

LL. B.—Three-year course.

LL. M.—One year after LL. B.

J. D.—Three-year course for those having a bachelor's degree from a recognized college.

College of Pharmacy.

Admission: 15 units; 8 prescribed—3 English, 2 foreign language, 2 mathematics, 1 physics.

Degrees:

Ph. C.—Three-year course.

B. S. in Pharmacy.—Four-year course.

Homeopathic Medical School, offers work in medicine and surgery, especially from a homeopathic standpoint.

Admission: Two years of collegiate work.

Degree: M. D.—Four-year course.

College of Dental Surgery.

Admission: 15 units; 9 prescribed—3 English, 2 mathematics, 2 science, 2 Latin. One year of collegiate work in fall of 1920.

Degrees:

D. D. S.—Four-year course.

M. S.—At least one year of postgraduate work. Two years of practice and publication of original articles of scientific value are prerequisite for this degree.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Graduate School—Continued.

Degrees:

A. M. and M. S.—One year postgraduate work.

M. S. in Forestry.—One year of postgraduate work after B. S. in Forestry.

M. L. D.—One year postgraduate work after A. B.

M. S. in Engineering.—One year postgraduate work after B. S.

M. S. in Architecture.—One year of postgraduate work after B. S. in Architecture.

M. S. in Public Health.—One year of postgraduate work after M. D. To obtain this degree a student must also have an A. B. or B. S.

Advanced Engineering degrees: C. E., M. E., E. E., Ch. E., Nav. Arch., Mar. E., Arch. (At least five years must have elapsed after the bachelor's degree before registration for engineering degree. At least one year must have been spent in responsible charge of some professional work.) One year advanced study. Thesis.

Ph. D. or Sc. D.—Three years of postgraduate work. Thesis.

D. P. H.—Two years after M. D. Thesis. (A bachelor's degree is a prerequisite.)

Summer session: A regular term of eight weeks (one-half semester) offering undergraduate and graduate courses in all the schools and colleges.

Expenses:

Annual fee—

	Men.	Women.
College of Literature, Science, and the Arts and Graduate School:		
Residents of Michigan	$49	$45
Nonresidents of Michigan	69	65
Colleges of Engineering and Architecture:		
Residents of Michigan	64	60
Nonresidents of Michigan	94	90
Medical School and Homeopathic Medical School (including laboratory fees):		
Residents of Michigan	107	103
Nonresidents of Michigan	127	123
Law School:		
Residents of Michigan	74	70
Nonresidents of Michigan	84	80
College of Pharmacy:		
Residents of Michigan	64	60
Nonresidents of Michigan	84	80
College of Dental Surgery:		
Residents of Michigan	114	110
Nonresidents of Michigan	134	130
Matriculation Fee, on first entering—		
Residents of Michigan	10	10
Nonresidents of Michigan	25	25

Board, about $6 a week.

Room, $2 to $3 a week.

Total annual expense, estimated $600–$700

Faculty, 500.

Students, 7,000, of whom 190 are from foreign countries, as follows: China, 30; South Africa, 27; Canada, 26; Japan, 23; Porto Rico, 11; Russia, 11; Hawaii, 6; Armenia, 6; Mexico, 5; Philippines, 5; Argentina, 5; Holland, 4; Chile, 4; Poland, 3; Turkey, 3; India, 3; Hungary, 2; Peru, 2; Germany, 2; Brazil, 1; Italy, 1; France, 1; Egypt, 1; Spain, 1; Nicaragua, 1; Singapore, 1; Greece, 1; Switzerland, 1; Korea, 1; Jamaica, 1; Cuba, 1.

Of special interest to foreign students.—The College of Literature, Science, and the Arts offers a very large variety of courses in English and the ancient and modern foreign languages, music and fine arts, history, political science, political economy, commerce, and sociology, philosophy, psychology and education, mathematics, and the physical and biological sciences. Special four-year programs are arranged in journalism, general business, accounting; banking, and insurance and statistics, and a five-year program in government and municipal administration. The four-year program in technical and applied chemistry leads to a special degree.

The university was one of the first to recognize the need for trained specialists in landscape design, and to establish a course for that purpose. The work in this field covers five years, and includes, in addition to a large amount of nonprofessional studies, such subjects as civic improvement, design of home grounds, country places, and cemeteries, park and city planning, forestry, architecture, fine arts, surveying, and municipal engineering.

The work in forestry is prescribed throughout the four undergraduate years. Courses will be recommended for such lines as forest engineer, forest entomologist, forest pathologist, forest grazing expert, city forester, and others.

Combined curricula are offered, leading to degrees in letters and in law, medicine, and dentistry.

In the College of Engineering the student selects, that field in which he wishes to work from among the groups into which the general subject is divided. Civil engineering includes structural, hydraulic, transportation, highway, sanitary, municipal, and geodetic engineering. Steam power, internal-combustion, machine design, hydro-mechanical, heating, ventilating, and refrigerating, industrial, and automobile engineering are the mechanical engineering groups. Electrical engineering includes the telegraph, telephone, and radio, power, railway, and illumination groups. Chemical engineering comprises metallurgy, gas engineering, organic industries, general manufacture, and paper manufacturing.

The university is one of the few in this country offering thorough courses in marine engineering and naval architecture. A special laboratory is equipped for this work, and includes a naval tank for various experiments relating to resistance, propulsion, and steering, to be made upon models of ships and propellers. Thorough courses are also given in aeronautical engineering.

The work in architecture includes design, construction, and architectural engineering.

The Law School has been long established, and offers instruction by the latest methods in the fundamental theory and the practice of the law.

Both the Medical School and the Homeopathic Medical School maintain the highest standards, with modern laboratories, ample clinics, bedside instruction in large, well-equipped hospitals under faculty control. Both schools conduct training schools for nurses.

The Dental College is of highest rank, and its diplomas are recognized the world around. Its laboratories and operating rooms are large and well equipped, and the clinical material is abundant.

The College of Pharmacy, in addition to undergraduate courses, offers facilities for advanced work in food and drug analysis, drug assaying, pharmacology, bacteriology, and physiological chemistry.

The Graduate School affords opportunity for advanced study leading to the higher academic, technical, and professional degrees, including the most modern work in public health.

UNIVERSITY OF MINNESOTA, Minneapolis, Minn., a city of 380,582 inhabitants. Founded, 1851; a "land-grant" institution; coeducational.

College of Science, Literature, and the Arts (undergraduate).
- Admission: 15 units; prescribed—4 English (if 4 units of foreign language are offered 3 English will be accepted), 2 mathematics.
- Degrees:
  - A. B.—Four-year course in science, literature, and the arts.
  - B. S.—Four-year courses in—
    - Combined arts and medicine.
    - Business education.
    - Social and civic work (four and five years). At end of fifth year M. A. degree awarded.
    - Interior decoration.
  - B. Mus.—Four-year course in arts and music. For admission evidence of musical ability, in addition to the required 15 units, must be shown.

College of Engineering and Architecture.
- Admission: 15 units; prescribed—4 English (if two years foreign language are offered 3 English will be accepted), 2 mathematics.
- Degrees:
  - B. S. in Engineering.—Four-year course.
  - B. S. in Architecture.—Four-year course.
  - C. E., M. E., E. E., Architect.—Five-year courses; thesis.

College of Agriculture, Forestry, and Home Economics (at St. Paul).
- Admission: 15 units, as in College of Science, Literature, and the Arts.
- Degree: B. S.—Four-year courses in agriculture, forestry, and home economics.

Law School.
- Admission: Two years of collegiate work.
- Degree: LL. B.—Three-year course.

Medical School.
- Admission: Two years of collegiate work, including rhetoric, physics, chemistry, zoology, French or German.
- Degrees:
  - B. S.—Four-year course (2 arts, 2 medicine).
  - M. D.—Four years' study, and one year to be spent as an interne in an approved hospital or in approved laboratory study.

College of Dentistry.
- Admission: 15 units; 6 prescribed—3 English, 2 mathematics, 1 chemistry.
- Degree: D. D. S.—Four and five-year courses.

School of Mines.
- Admission: 15 units; 5 prescribed—3 English, 2 mathematics.
- Degrees:
  - E. M. (Engineer of Mines)—Four-year course; thesis.
  - E. M. (Geology) (Engineer of Mines in Geology)—Four-year course; thesis.
  - Met. E. (Metallurgical Engineer)—Four-year course; thesis.

College of Pharmacy.
- Admission: 15 units; 7 or 8 prescribed—4 English, or 3 English accompanied by 2 in a foreign language, 2 mathematics, 1 Latin.
- Degrees:
  - Ph. C.—Three-year course.
  - B. S. in Phm.—Four-year course.
  - M. S. in Phm.—Five-year course.
  - D. Sc. in Phm.—Six-year course.

School of Chemistry.
- Admission: 15 units; 5½ prescribed—3 English, 2½ mathematics.
- Degrees:
  - B. S. in Chem.—Four-year course in analytical chemistry.
  - B. A.—Four-year course in arts and chemistry.
  - B. S. in Chem.—Five-year course in arts and chemistry.
  - B. S.—Four-year course in applied chemistry.
  - Chem. E.—Five-year course in applied chemistry.

College of Education.
- Admission: Two years' collegiate work.
- Degree: B. S. in Education—Two-year course.

Graduate School.
- Admission: Bachelor's degree from a recognized college.
- Degrees:
  - M. A., M. S.—One year of postgraduate study; thesis.
  - Ph. D.—At least three years of postgraduate study; thesis.

Expenses:

Incidental fee (Colleges of Science, Literature, and the Arts, Education, Agriculture, Forestry, and Home Economics)—	
Resident	$40
Nonresident	80
Graduate School	30
College of Engineering	60
Schools of Mines and Chemistry	55
Law School	65
College of Pharmacy	55
Medical School	150
College of Dentistry	100
Board, per week	4.50-6
Room, per month	6-20
Total annual expense	350-950

Faculty, 600.

Students, 5,567 collegiate, 4,312 subcollegiate, 2,234 extension; total, 12,113, of whom 45 are from foreign countries, as follows: Austria-Hungary, 2; Canada, 4; China, 7; Cuba, 1; England, 2; France, 1; Dominican Republic, 2; India, 5; Japan, 2; Mexico, 1; Norway, 6; Philippines, 1; Roumania, 1; Russia, 8; South Africa, 1; Spain, 1.

Of special interest to foreign students.—The work in the College of Agriculture is divided into two groups: (1) Those courses of study preparing the student for general agricultural pursuits, including agricultural education, agronomy, and farm management, dairy and animal husbandry, and horticulture, and (2) courses in special fields of agricultural science preparing the student usually for scientific research. In the latter group is included agricultural chemistry, entomology, plant pathology, and soils. Six months' practical farm experience is required before graduation.

The university also maintains schools of agriculture with three-year courses of study adapted to the needs of farm boys and girls who have not had sufficient preparation for the college work. They offer courses of special training for practical farm life and for practical home economics.

The curriculum of the College of Forestry includes courses in general forestry; dendrology; silviculture; forest mensuration—protection, management, and by-products; lumbering and lumber manufacturing, and wood preservation. The forest experiment stations at Cloquet, where the State maintains a tract of 2,700 acres, and at Itaska, provide excellent facilities for experiment and practical work.

The schools of medicine and dentistry offer thorough courses and rank high among similar schools throughout the country.

Especially strong courses are offered in the departments of geology and chemistry.

ST. LOUIS UNIVERSITY, St. Louis, Mo., a city of 772,897 inhabitants. Founded, 1818.

College of Arts and Sciences (undergraduate).

Admission: Graduation from an approved high school.

For A. B. degree, examination in, philosophy and Latin; in Greek or one of the modern languages; and in physics, or chemistry, or biology, or astronomy. or geology; or in English, or mathematics, or history or economics, or social science.

For B. S. degree, examination in branches named above; major to be a science.

Degrees: A. B. and B. S.—Four-year courses.

School of Medicine.

Admission: Two years of college work in physics, chemistry, biology, and a modern language, beyond a regular four-year high school course.

Degree: M. D.—Four-year course.

School of Dentistry (St. Louis Dental College).

Admission: Graduation from an approved high school.

Degree: D. D. S.—Four-year course.

Institute of Law.

Admission: Graduation from a recognized high school.

Degrees:

LL. B.—Three-year (day) course; four-year (night) course.

LL. M.—One year of postgraduate study after LL. B.; thesis.

School of Commerce and Finance.

Admission: Graduation from a recognized high school.

Degree: B. C. S.—Three-year course; thesis. Certificates of proficiency are granted to students who complete a required amount of work and who are not candidates for a degree.

School of Divinity (Catholic).

School of Philosophy and Science.

Expenses:

Tuition—	
College of Arts and Sciences	$100
School of Medicine	175
School of Dentistry	160
Institute of Law	100
School of Commerce and Finance	80
Board and room	128–190
Total annual expense	300–525

Faculty, 217.

Students, 1,011, of whom 29 are from foreign countries, as follows: Albania, 1; Argentina, 2; Belgium, 2; Canada, 6; Colombia, 1; England, 1; Egypt, 1; France, 1; Germany, 1; Hawaii, 1; Ireland, 1; Italy, 3; Japan, 1; Mexico, 2; Philippines, 2; Poland, 1; San Salvador, 1; Spain, 1.

UNIVERSITY OF MISSOURI, Columbia, Mo., a town of 10,392 inhabitants. Founded, 1839; a "land-grant" institution; coeducational.

College of Arts and Science (undergraduate).

Admission: 15 units; 6 prescribed—3 English, 1 mathematics, 2 in *one* foreign language.

Degree: A. B.—Four-year course.

College of Agriculture.

Admission: 15 units; 4 prescribed—3 English, 1 algebra.

Degrees:

B. S. in Agriculture—Four-year course. Two different courses are offered, one for men and the other for women.

M. F.—Five-year course in forestry. At the completion of the fourth year B. S. in forestry is conferred.

School of Education.

Admission: Two years' work in the College of Arts and Science, or its equivalent.

Degrees: B. S. in Ed.—Two-year course. Teachers' certificates are also granted.

School of Law.

Admission: Same as College of Arts and Science.

Degree: LL. B.—Four-year course.

School of Medicine.

Admission: Two years' collegiate work. The work comprises only the first two years of a medical course. At its completion a certificate is granted.

School of Engineering.

Admission: Same as College of Arts and Science.

Degrees:

A. E.—Five-year course.
C. E.—Five-year course.
E. E.—Five-year course.
M. E.—Five-year course.
Ch. E.—Five-year course.
B. S. in Eng.—Four-year course.

School of Mines and Metallurgy (at Rolla).

Admission: 15 units, as in College of Arts and Sciences.

Undergraduate courses, four years:	Degrees.
Mining Engineering	B. S. in Mining Engineering.
Metallurgy	B. S. in Metallurgy.
Civil Engineering	B. S. in Civil Engineering.
General Science	B. S. in General Science.

Graduate courses.—One year of postgraduate study and thesis.

The faculty of the Graduate School has charge of all graduate work in the university and offers graduate instruction in the groups of classical languages, modern languages, philosophy and experimental psychology, education, history and political science, mathematical and physical sciences, biological sciences, art, home economics, agriculture, and engineering.

School of Mines and Metallurgy (at Rolla)—Continued.

Admission:

Bachelor's degree in the subject to be pursued.

Mining Engineering; degree, E. M.

Metallurgy; degree, Metallurgical Engineer. Bachelors of Science in Civil, Electrical, or Mechanical Engineering may attain the degree E. M. by two years of postgraduate study and thesis.

School of Journalism.

Admission: Two years' collegiate work.

Degree: B. J.—two-year course.

School of Business and Public Administration.

Admission: Two years' collegiate work.

Degree: B. S. in Business Administration—two-year course.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M.—One year of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis.

Expenses:

Tuition (free for residents of Missouri) for nonresidents of Missouri (except in Graduate School)	$20
Board (at university), per week	4–6
Room, university dormitories, per year	20–35
Board and room (outside university), per week	5–6
Total annual expense	360

For women the annual expense will average about $75 more.

Faculty, 296.

Students, 3,500, of whom 16 are from foreign countries, as follows: Africa, 1; Bolivia, 2; Brazil, 2; Canada, 1; China, 8; Denmark, 8; Lithuania, 1.

Of special interest to foreign students.—The College of Agriculture offers curricula for training in the fundamentals of general agriculture and for specialization in animal husbandry, agricultural chemistry, dairying, farm crops, forestry, horticulture and botany, soils, and veterinary medicine.

In connection with the five-year course in forestry, a 50,000-acre forest in the Ozark regions provides excellent facilities for practical work and experimentation.

The School of Journalism offers numerous courses, including history and principles of journalism, comparative journalism, reporting, news and editorial writing, copy reading, newspaper jurisprudence, illustrative art, agricultural journalism, newspaper management, and advertising.

The School of Mines at Rolla is within easy reach of lead, zinc, and iron regions, where opportunities may be had to observe the various processes of mining and smelting.

WASHINGTON UNIVERSITY, St. Louis, Mo., a city of 772,897 inhabitants. Founded, 1853; coeducational; nonsectarian.

The College (for undergraduate work).

Admission: Graduation from four-year accredited preparatory school; 3 units in English prescribed.

Degrees:

A. B.—Four-year course.

B. S.—Four-year course: two years in the College and two in the School of Medicine.

Schools of Engineering and Architecture.

Admission (for undergraduate work): Graduation from a four-year accredited preparatory school; 3 units in English and 3 in mathematics prescribed. For graduate work: Bachelor's degree from a recognized college.

Degrees:

B. S. in Civil, Mechanical, Electrical, or Chemical Engineering—Four-year courses.

B. of Arch.—Four-year course.

C. E., M. E., E. E., Chem. E.—Conferred upon graduates of the university after at least three years of professional work, one of which must have been in a responsible position, and the presentation of a thesis.

School of Commerce and Finance.

Admission: Two years' prescribed collegiate work.

Degree: B. S. in Commerce—Four-year undergraduate course: two in the College and two in School of Commerce and Finance.

Henry Shaw School of Botany.

Maintains close cooperation with the Missouri Botanical Garden, and offers special opportunities for study and research in botany.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M., M. S. in Arch., M. S. in Chem., M. S. in Com.—One year of resident postgraduate study; thesis.

Ph. D.—Three years of resident postgraduate study; thesis.

School of Law.

Admission: One year of college work.

Degree: LL. B.—Three-year course.

School of Medicine.

Admission: Two years of college work, including English, German, or French, physics, chemistry, and biology.

Degree: M. D.—Four-year course.

School of Dentistry.

Admission: Graduation from an approved secondary school.

Degree: D. D. S.—Four-year course.

School of Fine Arts.

Offers excellent instruction in drawing, painting, sculpture, and applied art.

Division of University Extension.

Admission: Varies for each course of study.

Expenses:

Tuition—

College—

Schools of Engineering, Architecture, Commerce and Finance, Dentistry	$150
Graduate School	25
School of law	100
School of Medicine	200
School of Fine Arts	75
Division of University Extension: Varies per course per year	10–24
Room rent in dormitories (furnished)	50–100

Faculty, 210.

Students, 1914, of whom 8 are from foreign countries, as follows: Japan, 3; China, 2; Russia, 1; India, 1; Canada, 1.

Of special interest to foreign students.—The university has a group of modern buildings devoted entirely to the needs of the School of Medicine, which is excellently equipped with lecture rooms, libraries, museums, and laboratories. Numerous hospitals in the city provide clinical facilities, and each year positions as internes are open to several members of the graduating class. The course of study is divided into three general periods: first, a study of the fundamental sciences of anatomy, biological chemistry, physiology, pathology, and bacteriology; secondly, a period devoted primarily to clinical work; and finally, in the latter part of the course there is no prescribed curriculum, but the student is expected to devote himself to acquiring further knowledge in that field in which he is particularly interested or in research.

UNIVERSITY OF NEBRASKA, Lincoln, Nebr., a city of 54,948 inhabitants. Founded, 1869; a "land-grant" institution.

College of Liberal Arts (undergraduate).

Admission: 30[a1] points, 18 prescribed—4 English; 2 European history; 2 laboratory science; 10 mathematics and foreign language with a minimum of 4 in either.

Degrees: A. B. and B. Sc.—Four-year courses.

Teachers College:

Admission: One year's collegiate work.

Degrees: The course in Teachers College is three years long. Upon its satisfactory completion a baccalaureate degree is conferred by that college of the university in which the student's four years of work are carried.

A "Teachers College Diploma," showing subjects in which student is qualified to teach, is granted upon graduation.

University Teacher's Certificate.—Three years' work in Teachers College. A bachelor's degree from the university is a prerequisite, and the student must show exceptional scholastic ability and fitness for teaching.

College of Engineering.

Admission: 30 points, 4 English, 3 algebra, 3 geometry, 2 European history, 2 laboratory science, 4 foreign language for which additional English, history, or laboratory science may be substituted.

Degrees:

B. Sc. in Arch. E.—Four-year course in architectural engineering.

B. Sc. in Agr. E.—Four-year course in agricultural engineering.

B. Sc. in C. E.—Four-year course in civil engineering.

B. Sc. in E. E.—Four-year course in electrical engineering.

B. Sc. in M. E.—Four-year course in mechanical engineering.

Conferred by the Graduate College—

M. S. in Agricultural, Civil, Electrical, or Mechanical Engineering.—One year of postgraduate study; thesis.

Agr. E., C. E., E. E., M. E.—One year of postgraduate study and thesis for graduates of the university of at least five years' standing who hold a bachelor's degree and have been engaged in professional work.

Ph. D.—Three years of postgraduate study in engineering; thesis.

[a1] Two points are equal to one standard unit.

College of Agriculture.
  Admission: 30 points, as in College of Engineering.
  Degrees:
    B. Sc. in Agr.—Four-year course in agriculture.
    B. Sc. in Home Economics.—Four-year course in home economics.

Graduate College.
  Admission: Bachelor's degree from a recognized college.
  Degrees:
    A. M.—One year of postgraduate study; thesis.
    Ph. D.—Three years of postgraduate study; thesis.
    Graduate Teacher's Diploma is granted for advanced work in education.

College of Law.
  Admission: One year of collegiate work.
  Degrees:
    LL. B.—Three-year course.
    J. D.—Holders of baccalaureate degrees from colleges and universities of recognized standing and LL. B. from this university of from one to five years' standing, having spent at least one year in legal professional pursuits. Thesis.

College of Medicine (located at Omaha).
  Admission: Two years of collegiate work, including chemistry, physics, biology, and English.
  Degree: M. D.—Four-year course.

College of Pharmacy.
  Admission: 30 points, as in College of Arts and Sciences.
  Degrees:
    Ph. G.—Two-year course.
    Ph. C.—Three-year course.
    B. Sc.—Four-year course.

School of Fine Arts.
  Admission: 30 points, as in College of Arts and Sciences.
  Degree: B. F. A.—Four-year course in drawing and painting, dramatic art or music.

College of Business Administration.
  Admission: 30 points, as in College of Agriculture.
  Degree: B. Sc. in Bus.—Four-year course.

College of Dentistry.
  Admission: 30 points, as in College of Arts and Sciences.
  Degree: D. D. S.—Four-year course.

Expenses:
  Tuition—Teachers College, High School, Colleges of Law, Medicine, Pharmacy and Dentistry, $13.50 to $75 a semester.
  Board, $5 to $7 per week.
  Room, $5 to $10 per month.
  Minimum annual expense, $300.

Faculty, 251.

Students, 4,510, of whom 12 are from foreign countries, as follows: Philippines, 6; Hawaii, 1; Japan, 1; Korea, 2; Guatemala, 1; Moravia, 1.

Of special interest to foreign students.—The Teachers College aims especially to train better teachers for secondary schools and departmental work. A high-grade accredited high school is maintained, and, in addition, the schools throughout the city provide opportunities for study of problems connected with their administration and teaching, and for observation and practical work.

The Graduate College confers the degree of Master of Arts and of Doctor of Philosophy on the terms prescribed in common by members of the Association of American Universities.

DARTMOUTH COLLEGE, Hanover, N. H., a town of 1,300 inhabitants, exclusive of students, 4 miles north of railroad center at White River Junction, Vt. Founded, 1769.

Dartmouth College. Undergraduate Department of Arts and Sciences.
- Admission: 14½ units.
  - For A. B. degree, 12½ prescribed—3 English, 1 history, 2½ mathematics, 4 Latin, 2 foreign language.
  - For B. S. degree, 10½–11 prescribed—3 English, 1 history, 2½ mathematics, 3–4 modern language, 1 science.
- Course of study, 4 years. The student is required to devote special attention to a subject in one of the following groups: (1) Language and literature, (2) mathematics and physical and natural sciences, (3) history and the social sciences; and, in addition, to complete a prescribed amount of work in each of the other groups.
- Degrees:
  - A. B. and B. S.
  - A. M. and M. S.—One year of postgraduate study; thesis.

Medical School:
- Admission: Two years' prescribed collegiate work. The medical school now offers only the first half of a four-year course.

Thayer School of Civil Engineering:
- Admission: Bachelor's degree from recognized college and examination.
- Degree: C. E.—Two years' postgraduate study; thesis.

Amos Tuck School of Administration and Finance:
- Admission: Three years' collegiate work.
- Degree: M. C. S.—Two years' postgraduate study and thesis.

Expenses:

Tuition (from 1919–20 all new students)	$200
Board, per week	4–8
Room	70–200
Total annual expense	500–800

Administration and faculty, 125.

Students, 1,100, of whom 9 are from foreign countries, as follows: China, 4; Canada, 1; Porto Rico, 1; Siam, 1; Turkey, 1; Hawaii, 1.

Of special interest to foreign students.—The Tuck School aims to prepare the student either for the general field of business or for that particular branch which he may select. Work is offered in accounting, commercial French, German, and Spanish, statistics, law, business organization and management, financial organization and administration, commerce and industry, banking, and transportation. Students who can show evidence of three years' work in a recognized college may, at the end of their first year, receive the bachelor's degree from Dartmouth, or, by special arrangement, from their own college.

Students in Dartmouth College may elect for their final year first-year courses in the graduate schools, and thus shorten the period of postgraduate work.

PRINCETON UNIVERSITY, Princeton, N. J., a city of 5,917 inhabitants. Founded, 1746.

Undergraduate Department.

Admission: Two methods—

(1) Examination in all subjects—

Prescribed for A. B. course—Latin, English, mathematics, and Greek or modern language.

For B. S. course—English, mathematics, Latin or modern language, and science.

For C. E. course—English, two foreign languages (one may be Latin), mathematics, and science.

In addition to the prescribed subjects, candidates for all three courses must offer electives amounting to about one-fourth of the total preparatory work.

(2) For candidates of exceptional ability; secondary school record and examination in four subjects—

For A. B. candidates—mathematics, English, Latin, Greek, or modern language.

For B. S. candidates—English, mathematics, Latin or modern languages, science.

For C. E. candidates—English, mathematics, foreign language, and science or history.

Degrees:

A. B.—Four years. Conferred upon those offering Latin for admission and fulfilling certain requirements in humanistic departments.

B. S.—Four years. Conferred upon those fulfilling the requirements in mathematics and science.

C. E.—Four years of technical study. Those having a bachelor's degree who have selected suitable courses during their undergraduate years may prepare for this degree by two years' work in professional subjects.

School of Electrical Engineering.

Admission: First degree from accredited college, or equivalent work in mathematics, physics, and chemistry.

Degree: E. E., after two years of graduate study.

The Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M.—At least one year of exclusively resident graduate study.

Ph. D.—A minimum of two years' graduate study. Requirements for the degree can rarely be completed in less than three years; thesis.

Graduate courses are offered in the following subjects: Philosophy, psychology, history and politics, economics and social institutions, art and archaeology, linguistics, Greek, Latin, English, modern languages, mathematics, astronomy, physics, chemistry, geology, biology; also courses in Semitics and Greek in Princeton Theological Seminary.

Expenses:

Tuition—	
Undergraduate and electrical engineering	$200
Graduate—	
Full-time students, per year	100
Part-time students, per year	40
Board, per week	7

Expenses—Continued.

Room (including light and heat)	$52–$256
Total annual expense (undergraduate)	558– 762
Total annual expense (graduate)	420– 600

Faculty, 207.

Students (1917), 1,555, of whom 26 are from foreign countries.

Of special interest to foreign students.—For admission to the undergraduate department an Asiatic student may offer an equivalent amount of Arabic, Chinese, Sanskrit, or Pali, as a substitute for the Latin requirement.

The Graduate College (of residence) is one of the best equipped groups of university buildings exclusively for graduate students to be found in the country. A liberal endowment and fellowship fund make it possible for Princeton to offer to able students exceptional opportunities for graduate work in arts and sciences.

STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, N. J., a city of 68,166 inhabitants. Founded, 1871.

Admission: 14½ units; 11½ prescribed—3 English, 3½ mathematics, 2 science, 2 languages, 1 history.

Undergraduate course, 4 years.

Mechanical Engineering; degree, M. E.

Expenses:

Tuition, per year (additional fees average about $60)	$225.00
Board, per week	7.00–9.00
Room, per week	2.50–4.00
Total annual expense	670.00–800.00

Faculty, 38, and 7 department assistants, who instruct.

Students, 472, of whom 9 are from foreign countries, as follows: Colombia, 4; Brazil, 1; Porto Rico, 1; British West Indies, 1; China, 1; Cuba, 1.

Of special interest to foreign students.—Stevens offers a single course leading to the degree of Mechanical Engineer, and aims to make the instruction in this particular field as complete and thorough as possible. Throughout the course the importance of the practical side of the subject is recognized and the classes make numerous field trips in charge of the instructors.

COLUMBIA UNIVERSITY, New York, N. Y., a city of 5,621,151 inhabitants. Founded, 1754.

Columbia College (men).

Undergraduate departments of arts and sciences. Courses which articulate with the graduate and professional schools.

Admission: 15 units.

Degree: A. B.—Four-year course.

Barnard College (women).

Undergraduate departments of arts and sciences.

Admission: 14½ units.

Degree: A. B.—Four-year course.

Graduate Faculties:

The Faculties of Political Science, Philosophy and Pure Science offer courses of advanced nonprofessional instruction and opportunities for specialized study and original research in the following departments: Anatomy, anthropology, astronomy, bacteriology, biological chemistry, botany, chemical engineering, chemistry, civil engineering, economics, electrical engineering, educational research, English and comparative literature, geology, Germanic

Graduate Faculties—Continued.

languages, Greek and Latin, history, Indo-Iranian, mathematics, mechanical engineering, metallurgy, mineralogy, mining, music, pathology, philosophy, physiology, psychology, physics, public law, Romance languages, Semitic languages, Slavonic languages, social science, zoology.

The degrees of Master of Arts and Doctor of Philosophy are conferred upon students who have completed the requirements for these degrees under these faculties. The requirements are in general as follows:

Admission: Bachelor's degree from recognized college, or its equivalent.

Degrees:

A. M.—Minimum of one year of graduate study and essay.

Ph. D.—Minimum of two years of graduate study (one of which must be at Columbia University), and dissertation.

(For professional graduate study, see the statements of the professional schools and faculties.)

School of Law.

Admission: Three years' collegiate work.

Degrees:

LL. B.—Three-year course.

LL. M.—One year of study after LL. B.

College of Physicians and Surgeons.

Admission: Two years' collegiate work and medical-student certificate of of the Regents of the University of the State of New York. This certificate is issued upon evidence of the satisfactory completion of not less than two full years of study, or the equivalent, in an approved college or scientific school, including one year's work in physics, biology, inorganic chemistry, and a modern language. Foreigners must take a special examination in English.

Degrees:

B. S.—Two-year course.

M. D.—Five-year course.

School of Dentistry.

Admission: Same as for College of Physicians and Surgeons.

Degrees:

B. S.—Two-year course.

D. D. S.—Four-year course.

Schools of Mines, Engineering, and Chemistry.

Admission: Three years' work in an approved college or scientific school.

Degrees: E. M., Met. E., C. E., E. E., Mech. E., Chem. E.—Three years' study.

School of Architecture.

Admission: Two years' collegiate work.

Degree: B. Arch.—Four years of study.

College of Pharmacy.

College course.

Admission: Qualifying certificate for a pharmacy student, granted by the State education department upon evidence of the completion of one year's work in approved secondary school.

Degree: Ph. G.—Two years of study.

University course.

Admission: Graduation from secondary school.

Degree: Ph. C.—Three years of study.

College of Pharmacy—Continued.
Graduate course:
Admission: Ph. C.
Degrees:
B. S. in Pharmacy—One year of postgraduate study.
Phar. D.—Three years of postgraduate study.

School of Journalism.
Admission: Two years of collegiate work.
Degrees:
B. Lit.—Two-year course.
M. S.—One year after B. Lit.

School of Business.
Admission: Two years of collegiate work.
Degrees:
B. S.—Two-year course.
M. S.—One year after B. S.

Teachers College.
School of Practical Arts.
Admission: 14½ units; 7 prescribed—3 English, 2 mathematics and science, 2 foreign language and history.
Degrees:
B. S. in Practical Arts—Four-year courses emphasizing the technology of fine arts, household arts, industrial arts, music, physical education, practical science.
B. S. in Education—Four-year course. Emphasis upon teaching of fine arts, household arts, industrial arts, music, physical education, nursing, and health.
M. S.—One year of postgraduate work.

School of Education.
Admission: Bachelor's degree from recognized college.
Degree: A. M.—One year of study.

Expenses:
Tuition—In Barnard College and the School of Law the tuition is a fixed charge. In the other schools and colleges of the university it is based on amount of work taken:

In Columbia College (average)	$196
In Barnard College	200
In School of Law	180
In College of Physicians and Surgeons (average)	240
In Schools of Mining, Engineering, and Chemistry (average)	260
In School of Architecture (average)	260
In School of Journalism (average)	240
In School of Business (average)	240
In School of Dentistry (average)	240
In College of Pharmacy (average)	145
In Teachers College (average)	200
Board, university commons	160–225
Room, university dormitory	90–190
Total annual expense	545–985

Faculty, 770.

Students, 7,088, during academic year, and 6,144 during summer session (including 890 double registrations), of whom 465 are from foreign countries, as follows:

Regular session: Argentina, 2; Armenia, 10; Australia, 4; Belgium, 2; Bulgaria, 2; Canada, 92; Chile, 4; China, 218; Colombia, 2; Costa Rica, 2; Cuba, 24; Denmark. 2; Ecuador, 2; France, 4; Germany, 6; Great Britain, 8; Greece, 2; Guatemala, 2; Iceland, 2; India, 6; Italy, 4; Japan, 122; Korea, 2; Liberia, 2; Mexico, 14; Newfoundland, 2; Norway, 6; Panama, 8; Persia, 6; Peru, 4; Poland, 2; Portugal, 2; Roumania, 4; Russia, 18; Santo Domingo, 4; Singapore, 2; South Africa, 6; Spain, 2; Sweden, 4; Switzerland, 2; Turkey in Asia, 10; Venezuela, 4; West Indies, 10.

Summer session: Bermuda, 2; Brazil, 1; Canada, 70; China, 27; Cuba, 8; Ecuador, 1; Greece, 1; India, 1; Italy, 4; Japan, 18; Mexico, 5; Newfoundland, 1; Panama, 2; Persia, 1; Peru, 1; South Africa, 1; Spain, 1; Switzerland, 2.

Of special interest to foreign students.—The school of education of Teachers College offers to advanced students extensive courses in the history and philosophy of education, educational psychology and sociology, theory and practice of educational administration, supervision, and class teaching. The Horace Mann school, and the Speyer school, including kindergarten, elementary, secondary classes, and neighborhood work, are maintained by the college, and provide unusual facilities for studying the practical work of teaching and for the investigation of educational problems. Arrangement is also made for work and observation in the New York public schools.

Numerous hospitals throughout the city with which the university maintains close relation give the students of the College of Physicians and Surgeons exceptional opportunities for study, observation, and clinical work.

The School of Law is one of the foremost law schools of the country.

The School of Journalism aims "to make better journalists, who will make better newspapers, which will better serve the public." Opened in 1912, it already occupies an important place among schools of journalism.

The College of Pharmacy of the City of New York became affiliated with Columbia in 1904. It is especially well equipped, and ranks among the best schools of pharmacy in the United States.

The Graduate Faculties of Political Science, Philosophy, and Pure Science, which offer advanced work, leading to the degrees of A. M. and Ph. D., in professional, scientific, and liberal subjects, have the largest student registration of any part of the university.

Extension teaching offers subjects ordinarily included in a classical education, for the benefit of those students who are able to give only a portion of their time to study.

The Summer School offers an unusually large number of courses and a foreign student may profitably attend the sessions.

The location of Columbia, in America's most populous city, the liberal endowment, the large number of valuable scholarships, and especially the high standing of the university in all departments have combined to draw to it in the past a great many foreign students.

The following departments are among those especially noteworthy, either because of the eminence of the men connected with them or because of the wide range of the courses offered: Mathematics, physics, biology, botany, geology, chemistry, Oriental and Semitic languages, Germanic languages and literature, English, history, economics and politics, anthropology, philosophy, and psychology.

CORNELL UNIVERSITY, Ithaca, N. Y., a city of 17,004 inhabitants. Founded, 1865; a "land-grant" institution; coeducational.

College of Arts and Sciences (undergraduate).

Admission: 15 units; 11 prescribed—for A. B. course, 3 English, 5 (in two) foreign languages, 1 history, 2 mathematics; for B. Chem. course, 3 English, 3 (in one) foreign language, 1 history, 4 mathematics.

Degrees:

A. B.—Four-year course.

B. Chem.—Four-year course, with special emphasis upon chemistry.

College of Law.

Admission: A certificate that the applicant has met the entrance requirements and satisfactorily completed two years of study in a university or college of approved standing.

Degree: LL. B.—Three-year course.

New York State College of Agriculture.

Admission: 15 units; 9 prescribed—3 English, 3 (in one) foreign language, 1 history, 2 mathematics.

Degree: B. S.—Four-year course.

New York State Veterinary College.

Admission: 15 units; 9 prescribed—3 English, 3 (in one) foreign language, 1 history, 2 mathematics.

Degree: D. V. M.—Three-year course.

College of Architecture.

Admission: 15 units; 12 prescribed—3 English, 3 (in one) foreign language, 1 history, 1 physics, 4 mathematics.

Degree: B. Arch.—Four-year course. (It is recommended that wherever possible a student plan to take five or even six years for this work in order to get a broader and more cultural training, by electing more nonprofessional courses.)

College of Civil Engineering.

Admission: 15 units; 11 prescribed—3 English, 3 (in one) foreign language, 1 history, 4 mathematics.

Degree: C. E.—Four-year course. (A five-year course has been arranged for those wishing to cover a broader field. For admission to this course 9 of the 15 units are prescribed units.)

Sibley College of Mechanical Engineering and Mechanic Arts.

Admission: 15 units; 11 prescribed—3 English, 3 (in one) foreign language, 4 mathematics, 1 history.

Degree: M. E.—Four-year course. (A five-year course is also arranged, giving a broader training, and for admission to this course 9 of the 15 units are prescribed units.)

Medical College (New York City).

Admission: Bachelor's degree from a recognized college.

Degree: M. D.—Four-year course. (The work of the first year of the course is also given at Ithaca.)

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M., M. Arch., M. C. E., M. M. E., M. F., M. S., M. S. in Agr., Master in Landscape Design.—One year's postgraduate study; thesis.

Ph. D.—Three years' postgraduate study; thesis.

Expenses:

Tuition—

In any department, $150. For residents of New York State, tuition is free in the Veterinary College and the College of Agriculture.

Board and room, $9 to $12 a week.

Faculty, 750.

Students, 3,600, of whom 108 are from foreign countries, as follows: China, 43; Cuba, 12; Canada, 10; Colombia, 6; Brazil, 4; Argentina, 3; Chile, 3; Australia, 2; Ecuador, 2; Guatemala, 2; Mexico, 2; Norway, 2; Russia, 2; Bahamas, 1; Dominican Republic, 1; Finland, 1; France, 1; Greece, 1; Honduras, 1; India, 1; Japan, 1; Palestine, 1; Panama, 1; Peru, 1; Siam, 1; South Africa, 1; Switzerland, 1; Turkey, 1.

Of special interest to foreign students.—The Graduate School has exclusive control of graduate work in all divisions of the university. It offers opportunities for advanced study and research in most of the important fields of knowledge, under the direct guidance of members of the faculty *and unhampered by formal restrictions.*

The College of Agriculture is exceedingly well equipped. In the Department of Dairy Industry there is practice in the laboratories and manufacturing rooms in milk testing, dairy bacteriology, butter, cheese, and ice-cream making, market-milk handling, and dairy mechanics. A five-year course in forestry provides thorough training for general agricultural students, prospective teachers, and others desiring an understanding of the plan of forestry in the life of the nation, for technical students in other lines wishing courses in special branches of the subject, and for professional forestry students. Among the other excellent courses in the College of Agriculture may be mentioned general agriculture, animal and poultry husbandry, pomology, horticulture, entomology, and landscape gardening. In all these fields, as well as in the departments of pure science, graduate study and research is carried on.

The Veterinary College is well equipped and provided with clinical facilities. Graduate courses are offered, with opportunity for special advanced work and research.

The location of the medical school, in New York City, with its numerous hospitals, provides almost unexcelled clinical material. In the fourth year students are required to spend a large part of their time in practical work as clinical clerks to the various wards of the New York and Bellevue Hospitals.

Graduates of the medical school are admitted to the final examinations for diploma of Licentiate of the Royal College of Physicians of London and membership of the Royal College of Surgeons of England.

The College of Civil Engineering, the Sibley College of Mechanical Engineering and Mechanic Arts, and the College of Architecture are of high repute and have attracted many foreign students, especially for graduate work. In Sibley College the student may specialize in mechanical, electrical, or mining engineering, or, as a graduate student, may carry on investigation in any of these departments.

NEW YORK UNIVERSITY, New York, N. Y., a city of 5,621,151 inhabitants. Founded, 1831.

College of Arts and Pure Science (open to men only). Entering students are divided into three groups: A—prepared in Latin and one other foreign language; B—prepared in modern languages and advanced mathematics; C—those entering the two-year premedical course.

Admission: 15 units.

Section A—11½ or 12½ prescribed—3 English, 4 Latin, 2 or 3 additional foreign languages, 2½ mathematics.

College of Arts and Pure Science—Continued.

B—10½ or 11½ prescribed—3 English, 3 or 4 foreign languages, 3½ mathematics, physics, or chemistry.

C—11½ or 12½ prescribed—3 English, 3 or 4 foreign languages, 2½ mathematics, 1 physics, 1 chemistry, 1 biology.

Degrees: A. B.; B. S. in Pure Science; and B. S. in Commerce; four-year courses.

School of Applied Science (open to men only).

Admission: 15 units; 10½ or 11½ prescribed—3 English, 3 or 4 foreign langauges, 3½ mathematics, 1 physics.

Degrees:

B. S. in Civil Engineering, four-year course.
B. S. in Mechanical Engineering, four-year course.
B. S. in Chemical Engineering, four-year course.
C. E., M. E., Chem. E.—One year of postgraduate study; thesis.

Washington Square College, coeducational, offers four-year combined course in cultural and vocational training. Aims to meet the needs of teachers, lawyers, doctors, ministers, and other professional workers who desire further cultural training and a bachelor's degree, and students who desire collegiate training, but are unable to attend classes except in the afternoon and Saturday. The courses offered are of full collegiate value.

Admission: 15 units; of the 15 units 3 must be in English, 3 must be selected from one of the following subject groups: (1) classical languages, (2) modern foreign languages, (3) mathematics, (4) sciences, (5) history, economics, etc.; 2 must be selected from some second subject group; 2 must be selected from one or more of the remaining subject groups. The remaining 5 units are from election.

Degrees: A. B. and B. S.—128 points of credit, which should require not more than eight years, and may be completed in not less than four years.

Graduate School (coeducational).

Admission: Bachelor's degree from recognized college.

Degrees:

M. A. and M. S.—Not less than one year of postgraduate study; thesis.
Ph. D. and Sc. D.—Not less than three years' postgraduate study; thesis.

School of Law (coeducational).

Admission: Graduation from an approved high school or regents' qualifying certificate.

Degrees:

LL. B.—Three-year course.
J. D. for those holding bachelor's degree from recognized college.—Three-year course.
LL. M.—One year of postgraduate study after LL. B.
J. S. D. For those holding bachelor's degree from recognized college.—One year of postgraduate study after LL. B.

University and Bellevue Hospital Medical College (coeducational).

Admission: Two years of collegiate work, including chemistry, physics, and biology.

Degrees:

M. D.—Four-year course.
D. P. H.—One year's work in public health and sanitation after M. D.
M. B.—Two years' work in medical college after two years of collegiate work.

School of Commerce, Accounts, and Finance, coeducational.

Admission: Graduation from an approved secondary school or regents' qualifying certificate.

Degrees:

- B. C. S.—Three-year course of study plus two years' experience in business.
- M. C. S.—One year of postgraduate work after B. C. S.; thesis.
- M. B. A.—For those holding bachelor's degree from recognized college—Two years work in Graduate Division of Business Administration.

New York State Veterinary College.

Admission: Graduation from an approved secondary school.

Degree: D. V. S.—Four-year course.

School of Pedagogy, coeducational.

Admission: Bachelor's degree from a recognized college.

Degrees:

- Pd. M.—Not less than one year of postgraduate study plus two years' teaching experience.
- Pd. D.—Not less than two years' postgraduate study plus three years' teaching experience; thesis.

Expenses:

College of Arts and Pure Science and School of Applied Science	$195
Law School, for LL. B. or J. D. course	154
Law School, for LL. M. and J. S. D. courses	154
Medical School	245
School of Commerce, Accounts, and Finance (based on the amount of work taken)	17–202
Veterinary College	160
Washington College (based on the amount of work taken)	17–202
School of Pedagogy (based on amount of work taken)—	
For each 1-hour course	12
For each 2-hour course	24
Graduate School (based on amount of work taken)—	
For each 1-hour course	12
For each 2-hour course	24
Board	210–350
Room	100–300
Total annual expense	600–900

Faculty, 600.

Students, 9,150, of whom 72 are from foreign countries, as follows: Canada, 12; Chile, 2; China, 13; Cuba, 3; Denmark, 1; Egypt, 1; England, 4; France, 1; Germany 2; Holland, 1; Hungary, 2; India, 1; Ireland, 1; Japan, 8; Netherlands, 1; Newfoundland, 1; Norway, 2; Porto Rico, 8; Russia, 2; Scotland, 1; Sweden, 1; Switzerland, 4.

Of special interest to foreign students.—The medical school possesses four adjoining buildings, and numerous hospitals throughout the city offer abundant clinical facilities. The course in public health and sanitation includes a study and investigation of measures for controlling the spread of communicable diseases, institutions for the care of the sick, hygiene of infancy and childhood, inspection of food supplies, sanitation and sanitary engineering, applied bacteriology and chemistry, vital statistics, economics, administration, and diseases of animals. New York City provides unusual opportunities for work of this nature.

The School of Commerce, Accounts, and Finance was established in 1900, and offers complete cuorses in accounting, commerce, finance, government and public affairs, law, English, Spanish, French, and German. The location in a great business and commercial center such as New York should prove attractive to students contemplating work in such a school.

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N. Y., a city of 72,013 inhabitants. Founded in 1824, it is the oldest existing school of engineering to be established in any English-speaking country.

Admission: 14 units; 10 prescribed—3 mathematics, 3 English, 2 foreign language, 1 science, 1 history.

Undergraduate courses (4 years):

	Degree.
Civil engineering	C. E.
Mechanical engineering	M. E.
Electrical engineering	E. E.
Chemical engineering	Ch. E.
General science	B. S.

Graduate courses:

Degrees—

M. C. E., M. M. E., M. E. E., M. Ch. E., and M. S.—One year for holders of bachelor's degree.

Ph. D., Sc. D., and Eng. D.—Three years of graduate study, two of which must be spent in residence at the institute.

The Graduate work offered covers many branches of engineering and science under the following definite subheadings: Railroad engineering, highway engineering, hydraulic engineering, sanitary engineering, structural engineering, steam and gas engineering, machine design, electrical engineering, chemical engineering, chemistry, and pure and applied mathematics.

Expenses:

Tuition—	
Undergraduate in civil, mechanical, and electrical engineering	$205
Undergraduate in chemical engineering and general science	230
Graduate	150
Board and lodging, per week	$6– 9
Total annual expenses	450–950

Faculty, 64.

Students, 646, of whom 66 are from foreign countries, as follows: Argentine, 2; Australia, 1; Brazil, 17; Canada, 1; China, 8; Colombia, 6; Cuba, 13; Ecuador, 1; Haiti, 3; Honduras, 3; Mexico, 5; Panama, 1; Salvador, 2; Santo Domingo, 2; Venezuela, 1.

Of special interest to foreign students.—Instruction in the engineering courses includes the design and construction of roads, railroads, bridges, buildings, masonry structures, foundations, canals, sewers, water supplies, docks, harbors, steam and gas engines, boilers, turbines, water wheels, ships, heating systems, refrigerators, manufacturing plants, electric generators and motors, electric power-house equipment, transmission lines, lighting systems, electrochemical apparatus, telephone and telegraph systems, and industrial chemical plants.

In addition to the above, instruction is given in all branches of chemistry including industrial chemistry, food and water analysis, and sewage disposal, and in mineralogy, geology, and metallurgy. Unusually well-equipped laboratories are provided for all this work.

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C., a town of 2,000 inhabitants, on the Greensboro-Goldsboro branch of the Southern Railroad. Founded, 1789.

College of Liberal Arts. Undergraduate.

Admission: 15 units; prescribed—3 English, $2\frac{1}{2}$ mathematics, 1 history, 4 modern languages or $5\frac{7}{10}$ if ancient and modern languages, remainder elective.

Degree: A. B.—Four-year course.

School of Applied Science. Undergraduate.

Admission: 15 units; prescribed—3 English, 3 mathematics, 1 history, 2 modern language, 1 science, remainder elective.

Degree: B. S.—Four-year course. Curricula prescribed for B. S. in chemistry, in electrical engineering, in civil and highway engineering, in medicine, or in geology.

School of Commerce. Undergraduate.

Admission: 15 units; prescribed—the same as for the College of Liberal Arts, except that only 2 units in a modern language are required.

Degree: B. S.—Four-year course.

School of Education. Undergraduate.

Admission: 15 units; prescribed—the same as for the College of Liberal Arts.

Degree: A. B.—Four-year course.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M. and S. M.—One year of postgraduate study; thesis.

Ph. D.—Three years of postgraduate study; thesis.

Graduate work is offered in the following subjects: Ancient languages, modern languages, English, history, economics, philosophy, education, mathematics, chemistry, electricity, physics, biology, and geology.

School of Law.

Admission: For students not candidates for a degree the same as for the College of Liberal Arts; for candidates for the degree of LL. B., 2 years of collegiate work; for candidates for the combined degree, A. B.—LL. B., 3 years of collegiate work.

Degrees:

LL. B.—Three-year course.

A. B. and LL. B.—Six-year course, three undergraduate and three in law.

School of Medicine.

Admission: Two years in the School of Applied Science, or, for candidates for the B. S. degree, 3 years in the School of Applied Science.

Degree: B. S.—Two years, plus 3 in School of Applied Science. (Only courses in theoretical medicine are offered; the last two years—clinical medicine—required for the M. A. degree are to be sought at other institutions.)

School of Pharmacy.

Admission: 15 units, elective.

Degrees:

Ph. G.—Two-year course.

P. D.—Three-year course.

Ph. C.—Three-year course, but without the requirement of practical experience.

Expenses:

Tuition—	
Undergraduate schools	$60.00
Graduate School, free.	
School of Medicine (including all fees except matriculation)	120.00
School of Law	75.00
School of Pharmacy	60.00
Matriculation (for all students)	30.00
Board—	
University commons, per month	18.00
Outside University, per month	$20.00– 25.00
Room—	
University dormitory, per year	12.50– 60.00
Outside University, per month	5.00– 20.00
Total annual expense	300.00–500.00

Faculty, 78.

Students 1,313, of whom 4 are from foreign countries, as follows: Japan, 1; Cuba, 1; Syria, 2.

CASE SCHOOL OF APPLIED SCIENCE, Cleveland, Ohio, a city of 796,836 inhabitants. Founded, 1880.

Admission: 15 units; 10 prescribed—3 English, 3 mathematics, 2 foreign languages, 2 science.

Undergraduate courses—Four years; all lead to a single degree, B. S. Thesis.

Civil Engineering. Mechanical Engineering. Electrical Engineering.

Mining Engineering (includes both mining and metallurgy. First three years alike for all students, but in fourth years they specialize in mining or metallurgy).

Chemical Engineering.

Physics.

Graduate courses:

Admission: Bachelor's degree from a recognized college.

Degrees: M. S.—One-year postgraduate study; thesis. Engineering degrees, C. E., M. E., E. E., E. M., Chem. E., are conferred upon graduates of the school who have been engaged in professional work for three years in responsible positions and who present an acceptable thesis. In exceptional cases they may be conferred upon graduates of other institutions, provided they have taken the master's degree at Case.

Expenses:

Tuition	$125
Board and room, per week	6–10
Miscellaneous	130– 210
Total annual expense	500– 700

Faculty, 53.

Students, 560, of whom 3 are from China.

Of special interest to foreign students.—In the first year the work is the same in all departments, after which the student is required to select that branch of engineering in which he wishes to specialize. The subjects become more technical as he advances, and in his final year all the time is devoted to studies in his own department. One-half of each day is given to practical work in the field or laboratory or drafting room. During the month of June a practice term of four weeks is held. There are no recitations, but students are engaged in practical work during the entire day. The freshmen study surveying in a summer camp, the sophomore civil engineers take railroad surveying, the sophomore mining engineers do surveying work in a mine in some part of the country, the junior mining engineers work in mines in the West, and students in other departments work in the laboratories.

MUNICIPAL UNIVERSITY OF AKRON, Akron, Ohio, a city of 208,435 inhabitants. Founded, as a denominational college, 1870. Became a municipal university in 1913; coeducational.

Buchtel College of Liberal Arts.

Admission: 15 units; 10½ prescribed for A. B. course—3 English, 2½ mathematics, 4 foreign language, 1 general history; 12 prescribed for B. S. course—3 English, 3 mathematics, 4 foreign language, 2 science (one unit must be physics or chemistry).

Degrees: A. B. and B. S.—Four-year courses.

Curtis School of Home Economics.

Admission: 15 units; 10½ prescribed—3 English, 2½ mathematics, 4 foreign language, 1 physics.

Degree: B. S. in Home Economics.—Four-year course, combining a broad cultural education with training in those branches of science essential to intelligent home management.

College of Engineering.

Admission: 15 units; 9½ prescribed—3 English, 2½ mathematics, 2 foreign language, 1 history, 1 chemistry or physics.

Five-year cooperative course:	Degree.
Civil engineering	C. E.
Mechanical engineering	M. E.
Electrical engineering	E. E.
Four-year cooperative course: Manufacturing production	B. S.

The cooperative plan aims to give the student a thorough training in both the theory and practice of engineering by requiring the practice to be learned under actual commercial conditions in local industrial organizations and the underlying science to be studied in the university under trained educators. To accomplish this the students are grouped in two sections, one of which is at work and the other in attendance at the university. For example, A, who is in section one, attends classes at the university for two weeks while B, who is paired with A and who is in section two, is at work. Then they change places and B attends the university for two weeks while A is at work. Of course, this necessitates the giving of all university work twice, once for each section.

The manufacturing production course in the university includes the fundamental courses in engineering, a thorough course in business training, and, in the factory, four years of half-time work in the production departments of a rubber factory.

Expenses:

Tuition—

Free for residents of Akron.

Students outside of Akron—

College of Liberal Arts	$100
School of Home Economics	100
College of Engineering	75

Faculty, 32.

Students, 529, of whom 12 are from foreign countries, as follows: Russia, 6; Hungary, 2; Austria, 1; Scotland, 1; France, 1; Rumania, 1.

OBERLIN COLLEGE, Oberlin, Ohio, a village of 4,236 inhabitants. Founded in 1833; coeducational.

The College of Arts and Sciences, undergraduate department.

Admission, 15 units: For A. B. degree, 3 English, 2½ mathematics, 4 foreign languages (of which 2 must be Latin or Greek), 1 history, 1 science; 1½ additional from above-named subjects; 2 additional from any work counted for graduation from high school.

Degree: A. B.—Four-year course.

Graduate Department.

Admission: Bachelor's degree from recognized college.

Degree: A. M.—One year of graduate study.

Graduate School of Theology.

Admission: Bachelor's degree from recognized college.

Degrees:

D. B.—Three-year course in theological study.

S. T. M.—One year of graduate work in theology following the D. B. degree.

Conservatory of Music.

Admission, 15 units: 3 English, 2½ mathematics, 4 foreign languages, 1 history, 1 science; 1½ additional from above-named subjects; 2 additional from any work counted for graduation from high school.

Degree: Mus. B.—Four-year course.

Certificate: Course in Public School Music, three years.

Expenses:

Tuition—	
College of Arts and Sciences	$150
School of Theology, incidental fee only	6
Conservatory of Music, according to subjects chosen, average	300
Board and room, estimate, per year	189–342
Total annual expense, estimated	380–700

Faculty, 175.

Students, 1,614, of whom 76 are from foreign countries, as follows: Brazil, 3; Bulgaria, 1; Canada, 4; Ceylon, 1; Chile, 1; China, 39; France, 2; Germany, 1; Greece, 1; Japan, 12; Korea, 1; New Zealand, 2; South Africa, 3; Switzerland, 1; Asiatic Turkey, 4.

Of special interest to foreign students.—Special courses in English are offered to foreign students when needed. A strong Cosmopolitan Club aids in introducing foreign students to American college life. A faculty committee makes special efforts to help foreign students to secure valuable results from courses undertaken.

OHIO STATE UNIVERSITY, Columbus, Ohio, a city of 237,031 inhabitants. A "land-grant" institution. Founded, 1870; coeducational.

College of Agriculture.

Admission: 15 units; 8 suggested—2 English, 1 history, 2 mathematics, 1 physics, 2 foreign language. For home economics course 1 English and 2 foreign language additional are prescribed.

Degree:

B. Sc.—Four-year courses, with major in agriculture, horticulture, landscape architecture, or applied entomology.

B. Sc. in Home Economics.

College of Arts, Philosophy, and Science.

Admission: 15 units; 12 suggested—3 English, 1 history, 2 mathematics, 1 in a nonbiological science, 1 biological science, 4 foreign language.

Degree: A. B.—Four-year course.

College of Commerce and Journalism.
  Admission: Two years' collegiate work in a recognized college.
  Degrees:
    B. S. in Business Administration—Two-year course.
    B. S. in Accounting—Two-year course.
    B. S. in Journalism—Two-year course.

College of Education.
  Admission: 15 units; 11 suggested—3 English, 1 history, 2 mathematics, 1 science, 4 foreign language.
  Degree: B. S. in Education—Four-year course.

College of Engineering.
  Admission: 15 units; 9 prescribed—3 English, 3 mathematics, 1 physics, 2 foreign language.
  Degrees: B. Arch. E., B. Cr. E., B. Ch. E., B. C. E., B. E. E., B. M. E., B. E. M., B. E.—Four-year courses.

College of Law.
  Admission: Two years' collegiate work in a recognized college.
  Degrees:
    LL. B.—Three-year course.
    J. D.—Three-year course, for those having bachelor's degree from a recognized college and 50 hours' merit in the College of Law.

College of Pharmacy.
  Admission: 15 units; 8 prescribed—2 English, 1 history, 2 mathematics, 1 science, 2 foreign language.
  Degree: B. S. in Phar.—Four-year course; certificate—Ph. C.—two-year course.

College of Veterinary Medicine.
  Admission: 15 units from an approved secondary school.
  Degree: D. V. M.—Four-year course.

College of Medicine and College of Homeopathic Medicine.
  Admission: Medical students' certificate granted upon completion of high-school course and two years' collegiate work.
  Degree: M. D.—Four-year course.

College of Dentistry.
  Admission: Graduation from an approved secondary school.
  Degree: D. D. S.—Four-year course.

Graduate School.
  Admission: Bachelor's degree from recognized college.
  Degrees:
    A. M., M. S.—One year of postgraduate study.
    Arch. E., C. E., M. E., E. E., Cr. E., Ch. E., M. Arch.—
      (1) Four years of professional experience and thesis, or
      (2) M. S. in Engineering, followed by two years' experience and thesis, or
      (3) One year of experience, one year at university in engineering and thesis.
    Ph. D.—Three years' post graduate study and thesis (dissertation).

Expenses:
  Tuition (including incidental fee)—

College of Law	$60
College of Medicine	150
College of Dentistry	150
College of Homeopathic Medicine	150
Incidental fee in all other colleges of the University	30

Expenses—Continued.
  Board, $4.50 a week.
  Room, $8 a month.
  Total annual expense (except in Medical College) $400–$450

Faculty, 481.

Students, 5,150, of whom 74 are from foreign countries, as follows: Argentina, 2; Brazil, 2; British West Indies, 1; Bulgaria 1; Canada 1; Canal Zone, 1; China, 30; Colombia, 1; Cuba, 3; Greece, 1; Hawaii, 1; India, 3; Japan, 1; Korea, 5; Persia 3; Philippines, 3; Porto Rico, 4; Russia, 3; Scotland, 1; South Africa, 1; Switzerland, 1; Turkey, 5.

Of special interest to foreign students.—The four-year course in veterinary medicine aims to fit students for regular practice. The veterinary hospital, to which animals are brought from the city and nearby agricultural district, is well equipped. There are free clinics daily, at which the students assist.

The agricultural chemistry department offers courses in general and advanced agricultural chemistry, chemistry of fungicides and insecticides, dairy chemistry, chemistry of soils, chemistry of animal nutrition, food inspection and analysis, and the chemistry of food and nutrition.

The departments of animal husbandry, dairying, farm crops and horticulture offer opportunity for specialization along these various lines. The departments are well equipped for graduate work.

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio, a city of 401,247 inhabitants. Founded, 1870. A municipal university; coeducational.

McMicken College of Liberal Arts. Undergraduate.
  Admission: 15 units; 9 prescribed—3 English, 2 mathematics, 1 history, 3 foreign language (2 of which must be in same language).
  Degree: A. B.—Four-year course.

College for Teachers.
  Admission: Same as in College of Liberal Arts.
  Degree: B. S.—Four-year course.

Graduate School.
  Admission: Bachelor's degree from a recognized college.
  Degrees:
    A. M.—On full year's residence in the Graduate School.
    Ph. D.—Three years of postgraduate study; thesis.

College of Engineering and Commerce.
  Admission: 15 units; 6½ prescribed—3 English, 2½ mathematics, 1 history.
  Degrees:
    Engineering—

	Degree.
Four-year theoretical courses—	
Chemical engineering	B. S. in Chem. Eng.
Civil engineering	B. S. in Civ. Eng.
Electrical engineering	B. S. in Elec. Eng.
Mechanical engineering	B. S. in Mech. Eng.
Five-year cooperative courses—	
Chemical engineering	Ch. E.
Civil engineering	C. E.
Electrical engineering	E. E.
Mechanical engineering	M. E.
Metallurgical engineering	Met. E.

Commerce. B. S.—For regular four-year course, also for five-year cooperative course.

College of Medicine.
- Admission: Four-year high-school course, plus two years of college work.
- Degrees:
  - M. D.—Four-year course.
  - B. S. and M. D.—Six-year combined course in College of Liberal Arts and College of Medicine.

School of Nursing and Health.
- Admission: Four-year high-school course.
- Degrees:
  - Diploma of Graduate Nurse—Three-year course.
  - Diploma and degree of B. S.—Five-year combined collegiate and nursing course.

College of Law.
- Admission: Four-year high-school course, plus one year of college work.
- Degrees:
  - LL. B.—Three-year course.
  - A. B. and LL. B.—Six-year combined collegiate and law course.

Expenses:

Tuition—	
Courses in Liberal Arts, College for Teachers, College of Engineering, and College of Law	$100
College of Medicine	200
School of Nursing and Health, free.	
Graduate School, $5 per credit hour per semester.	
Board and room, per week	8-10
Total annual expense, average	400-600

Faculty, 304.

Students, 3,124, of whom 18 are from foreign countries, as follows: France, 7; China, 5; Russia, 2; Philippine Islands, 3; Chile, 1.

Of special interest to foreign students.—The College of Engineering offers two courses—a four-year theoretical course similar to that given in other engineering institutions and a five-year cooperative course in which the students, divided into sections, spend alternate biweekly periods in practical engineering work and at the university. The aim of the cooperative course is to give training in the practice of engineering, as well as instruction in the theory. The practice is taught in a shop or on a railroad, under actual commercial conditions, while the underlying science is taught in the university. Cooperative students are paid for their work in the shops at the same rate as other employees.

The College of Commerce and the College of Engineering have been merged, and a five-year cooperative course in commerce and administration is offered in addition to the regular four-year course. The cooperative course is designed to develop commercial engineers, men trained on both the productive and the commercial side of a business. The details of the operation of the cooperative course in commerce are the same as those of the cooperative course in engineering.

The College for Teachers includes the department of home economics and a department of vocational education, as well as the usual courses in education. The students receive their practical training in the public schools of Cincinnati under the supervision of the members of the faculty.

Under the new city charter the faculty of the College of Medicine becomes the attending staff of the Cincinnati General Hospital. Thus all the clinical facilities of the hospital and its branches are at the disposal of the college.

The hospital is built on the pavilion plan and embraces 24 large buildings. The new Medical College building and the hospital together constitute one of the greatest medical teaching plants in the country.

The Graduate School offers advanced work in the various departments and has available a number of scholarships for promising students. It has superior facilities for research in medicine and in the sciences.

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio, a city of 796,841 inhabitants. Founded, 1826.

Adelbert College (undergraduate department for men).

Admission: 15 units; 9½ prescribed, with a grade of at least 80 per cent in each unit—3 English, 2½ mathematics, 4 in one foreign language (or 1 in one language completed in the last preparatory year, together with 2 made up from college algebra, trigonometry, solid geometry, chemistry, physics, or history, taken in the last two preparatory years).

Degrees:

A. B.—Four-year course.

A. B. and B. S.—Five-year combined courses between Adelbert College and Case School of Applied Science.

College for Women (undergraduate).

Admission: (1) For degree of Bachelor of Arts: 15 units; 9 prescribed—3 English, 2½ mathematics, and ordinarily 4 in Latin. Candidates having required number of units for entrance, with high grades, but who lack 4 units of Latin, may be admitted provided they have 4 units in some other foreign language, or 2 or more units in each of two foreign languages.

(2) For the degree of Bachelor of Science (Household Administration): Same as for the A. B. degree; or, instead of 4 foreign language units, students may enter with 2 language units and 2 in history, physics or chemistry. Students may present home economics for entrance credit.

Degree:

A. B. and B. S.—Four-year courses.

B. S.—Six-year combined course between College for Women and the Cleveland School of Art.

A. B. and certificate of the Library School of Western Reserve University—four-year combined course.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees:

A. M.—One full year's residence.

A. M. in Medicine—To graduates in medicine in classes later than 1911 of this university or others of similar grade. Such candidates must also hold an academic degree, must complete at least a year of interne service or research work in an approved hospital, clinic, or laboratory, and must meet the requirements of registration and work as defined by the School of Medicine.

School of Medicine (coeducational).

Admission: A. B. degree from some recognized college, or three years' work in Adelbert College or the College for Women.

Degrees:

M. D.—Four-year course.

A. B. and M. D.—Seven-year combined course.

Law School (coeducational).
Admission: A. B. degree from some recognized college, or three years' work in Adelbert College or the College for Women.
Degrees:
LL. B.--Three-year course.
A. B. and LL. B.—Six-year combined course

Dental School (coeducational):
Admission: 15 units of secondary school work.
Degree: D. D. S.—Four-year course.

Library School (coeducational).
Admission: Minimum requirement, four-year secondary school course. Students admitted on examination.
Certificate—One year's course.

School of Pharmacy (coeducational).
Admission: Completion of four-year high-school course
Degrees:
Ph. G.—Two-year course.
Ph. C.—Three-year course.

School of Applied Social Sciences (coeducational).
Admission: A. B. degree.
Degree: M. A.—Two-year course.

Faculty, 264.
Students, 1,812.
Expenses:

Tuition—	
Adelbert College, College for Women, the Graduate School, School of Medicine, School of Law, and School of Applied Social Sciences	$150
Library School	100
School of Pharmacy	125
Dental School	200
Room and board, per week	7–9
Total annual expense	590–700

Of special interest to foreign students.—Special attention may be directed to the combined-course opportunities. The five-year course offered with Case School of Applied Science (situated adjacent to the university campus) is designed for the man who recognizes the demand for engineers possessed of a broader training than the purely technical school can give. The extra year is more than compensated for by the firmer foundation.

The situation of the university in the city of Cleveland brings unusual advantages to students of law and medicine. Exceptional clinical opportunities are offered by the School of Medicine, which controls four hospitals and is affiliated with as many more. A graduate course in medicine, which has recently been added, enables the student to specialize for an additional year.

OREGON STATE AGRICULTURAL COLLEGE, Corvallis, Oreg., a city of 5,752 inhabitants. A "land-grant" institution; coeducational.

Undergraduate Departments.
Admission: 15 units; 5 prescribed—3 English, 1 elementary algebra, 1 plane geometry. For admission to School of Forestry an additional ½ unit of algebra is required. For admission to School of Engineering an additional ½ unit of algebra and an additional ½ unit of geometry are required.

Undergraduate Departments—Continued.
- Degree: B. S.—Four-year courses, as follows:
  - In the School of Agriculture.
  - School of Commerce.
  - School of Engineering (civil, electrical, mechanical engineering; industrial arts).
  - School of Forestry.
  - School of Home Economics.
  - School of Mines (mining and ceramic engineering).
  - School of Pharmacy (also a two-year course leading to Ph. G. and a three-year course leading to Ph. C.).
  - School of Vocational Education.
  - Department of Chemical Engineering.
  - In addition to above—
    - The School of Music (no degree).
    - Vocational short courses varying in length from 6 months to 3 years.

Graduate Courses:
- Admission: Bachelor's degree from a standard college.
- Degrees: M. S., C. E., M. E., E. E., Che. E.—One year of graduate study; thesis.

Expenses:

Tuition, free.	
Board and room, per month	$26 and upward.
Laboratory and class fees, etc. (depending upon the courses taken), average per year	$45
Textbooks and class supplies, average	50
Average annual expense	425

Faculty, 368 (including Experiment Station and Extension workers).

Students, 2,874, of whom 20 are from foreign countries, as follows: Canada, 12; China, 1; India, 2; Netherlands, 1; Scotland, 2; Spain, 1; Alaska, 3; Philippines, 14.

UNIVERSITY OF OREGON, Eugene, Oreg., a city of 10,593 inhabitants. Founded, 1872; coeducational.

College of Literature, Sciences, and the Arts (undergraduate).
- Admission: 15 units; 7 prescribed—3 English, 2 mathematics, 1 history, 1 science.
- Degrees: A. B. and B. S.—Four-year courses.

School of Architecture and Allied Arts.
- Admission: 15 units; 8 prescribed—3 English, 3 mathematics, 1 history, 1 science.
- Degrees: A. B., B. S. in Architecture—Four-year courses.

School of Commerce.
- Admission: 15 units as in College of Literature, Sciences, and the Arts.
- Degree: A. B., B. S. in Commerce—Four-year courses.

School of Education.
- Admission: 15 units as in College of Literature, Sciences, and the Arts.
- Degree: A. B.—Four-year course.

School of Journalism.
- Admission: 15 units as in College of Literature, Sciences, and the Arts.
- Degree: A. B.—Four-year course.

School of Law.
- Admission: Two years of college work.
- Degrees: LL. B., J. D.—Three-year courses.

School of Medicine (at Portland, Oreg.).

Admission: Two years of college work, including physics, chemistry, histology, and French or German.

Degree: M. D.—Four-year course.

School of Music.

Admission: 15 units, as in College of Literature, Sciences, and the Arts.

Degree: B. Mus.—Four-year course.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees: M. A., M. S.—One year of postgraduate study, of which one semester at least must be spent in residence; thesis.

Graduate study leading to the M. A. degree is offered in the following departments: Botany, chemistry, economics and sociology, English literature, education, history, Latin, geology, mathematics, German, physics, psychology, rhetoric and American literature, and zoology.

One or more fellowships are offered in each of these departments. These fellowships offer from $200 to $500 a year.

Expenses:

Tuition—	
School of Music (based on amount of work taken), up to	$180
Law School, per year	30
School of Medicine	150
Free in other departments of the University.	
Board at University, $5 a week.	
Room at University, $1 a week.	
Board and room away from University, per month	25–30
Total annual expense	300–700

Faculty, 118.

Students, 1,350, of whom 8 are from foreign countries, as follows: China, 3; Canada, 1; Japan, 1; West Indies, 1; Philippines, 2.

BRYN MAWR COLLEGE, Bryn Mawr, Pa., a town of 5,000 inhabitants, in the suburbs of Philadelphia, a city of 1,823,158 inhabitants. Opened, 1885, for women only.

Admission (Undergraduate Department): Examination in all subjects, mathematics, English, Latin, history, physics, one of the three languages—Greek or French or German; and either one of the five languages—Greek or French or Italian or Spanish or German; or a second history and a second science.

Degree: A. B.—Four-year course.

Admission (Graduate Department): Bachelor's degree from a recognized college.

Degrees:

A. M.—One year of postgraduate study for graduate of Bryn Mawr only.

Ph. D. and A. M.—Three years of postgraduate study; thesis.

Expenses:

Tuition (undergraduate)	$200
Tuition (graduate)	125
Board (undergraduate)	300
Board (graduate)	300
Room (undergraduate)	100–525
Room (graduate)	100
Emergency fee charged to all students (except holders of fellowships and scholarships)	100
Total annual expense (undergraduate), minimum	710
Total annual expense (graduate)	630

Faculty, 63.

Students, 468, of whom 10 are from foreign countries, as follows: France, 4; England, 2; Canada, 2; Japan, 1; China, 1.

Of special interest to foreign students.—Bryn Mawr offers strong collegiate courses to women only. The students are not divided into the conventional four classes, and there is no time limit set for the completion of the requirements for graduation.

The School of Education offers graduate courses only to those who wish to study education for one, two, or three years, and it is assumed that about one-half of the time will be given to purely educational courses and the remainder to that subject which the student intends to teach. In connection with the department a model school is maintained which receives pupils at the age of 10 and prepares them for college in seven years. This work is under the direction of expert teachers, and excellent opportunity is thus afforded for observation and discussion.

The Carola Woerishoffer Graduate Department of Social Economy and Social Research offers one, two, or three years' training in many varieties of social work and social research, such as social relief and child welfare, community organization, vocational advisement, industrial supervision and employment management. Certificates are given for one or two years' work. A number of scholarships are given in this department for students preparing for employment management and community organization, and two special scholarships covering all other expenses are offered to French women who wish to study employment management and kindred subjects in the United States.

The college offers graduate work in all departments. Graduate courses are separate, for graduates only. In addition to 16 resident fellowships and 20 scholarships, 4 traveling fellowships are available. Twelve scholarships covering the cost ($530) of board, residence, and tuition in the Graduate School are offered—4 to British, 4 to French, 2 to Italian women, 1 to Swiss women, 1 to women from Scandinavia and The Netherlands.

LEHIGH UNIVERSITY, Bethlehem, Pa., a city of 50,358 inhabitants; 57 miles from Philadelphia, Pa., a city of 1,823,158 inhabitants; 86 miles from New York, N. Y., a city of 5,621,151 inhabitants. Founded, 1866.

Undergraduate courses.
  Admission:
    To B. A. course, 15 units; 8½ prescribed—3 English, 2 foreign languages, 1 history, 2½ mathematics.
    To business administration course, 14 units; 8½ prescribed—3 English, 2 foreign languages, 1 history, 2½ mathematics.
    To engineering courses, 14 units; 9½ prescribed—3 English, 2 foreign language, 1 history, 3½ mathematics.
  Degrees:
    B. A.—Four-year course arts and science.
    B. S.—Four-year course in business administration.
    C. E., M. E., Met. E., E. M., E. E., B. S. in Chem., Ch. E., N. E. (ship construction and marine transportation)—Four-year courses in the various subjects indicated by the degrees.

Graduate courses:
  Admission: Bachelor's or technical degree from a recognized college.
  Degrees: M. A., M. S.—One year postgraduate study.

Expenses:

Tuition—

For engineering and chemistry	$200
For B. A. courses	150
For graduate courses	100
Room, university dormitories	65–81
Board, university dining hall, per month	25
Total annual expense, approximately	750

Faculty, 84.

Students, 900, of whom 32 are from foreign countries, as follows: Porto Rico, 2; Mexico, 5; Honduras, 1; Colombia, 2; Brazil, 1; Ecuador, 1; Venezuela, 1; Russia, 1; Siam, 1; Japan, 2; China, 13; Dutch East Indies, 2.

Of special interest to foreign students.—The university offers excellent courses in civil, mechanical, electrical, metallurgical, chemical, and mining engineering, chemistry, and ship construction and marine transportation. The course in business administration includes, besides the general, nontechnical subjects, work in commerce, economics, industrial history, accounting, business and public law, labor legislation, railway administration, finance, banking and currency, and insurance.

PENNSYLVANIA STATE COLLEGE, State College, Pa., a town of 1,800 inhabitants. Founded, 1863; a "land-grant" institution; coeducational.

Admission: 15 units.

For Schools of Engineering, Mining, or Natural Science, 11 prescribed—3 English, 3 mathematics, 2 foreign language, 2 science, 1 history.

For Schools of Liberal Arts and Agriculture (except classical course) and Courses in Home Economics the unit of mathematics which includes algebra (from quadratics) and solid geometry, is not prescribed.

For classical course, 10 prescribed—3 English, 2 mathematics, 1 history, 4 Latin.

Degrees:

A. B.—Four-year course in School of Liberal Arts.

B. S.—Four-year course in—

School of Agriculture.
School of Engineering.
School of Mines.
School of Natural Sciences.
Department of Home Economics.

A. M., M. S., C. E., M. E., E. E., E. M.—These degrees are conferred upon holders of a bachelor's degree who complete a special program of advanced work arranged by faculty committee.

Three-year prelegal and premedical courses are offered. A student who has completed these receives his bachelor's degree after one year in the professional school.

Expenses:

Tuition, free.

Gymnasium fee	$10
Library fee	3
Incidental fee	35
Board, per week	4–5
Room, college dormitory, per year	35–75
Room, outside college, per year	54–72

Faculty, 267.

Students, 2,396, of whom 16 are from foreign countries.

Of special interest to foreign students.—The course in industrial engineering aims to fit the student for positions in industrial organizations, leading to superintendence, purchasing, selling, scientific management, and industrial business administration. Besides the regular engineering subjects, emphasis is placed upon such matters as industrial economics, logic, psychology, and specialized work in accounting, forestry management, shop time study, machine tools and methods, and factory planning, with more shop practice than is found in the regular engineering curricula. For training teachers and supervisors of industrial work in schools a course is also offered in industrial education.

Pennsylvania is one of the greatest mining States and the student in the School of Mines is given abundant opportunity for observation and study of mining and metallurgical operations.

The Institute of Animal Nutrition, affiliated with the college and the Experiment Station, is devoted entirely to research and provides excellent facilities for graduate work in this subject.

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa., a city of 1,823,158 inhabitants. Founded, 1740.

The College. Undergraduate Department of Arts and Sciences; special work in biology and music.

Admission for the course in Arts and Science: 14½ units; 9½ prescribed—3 English, 1 history, 2½ mathematics, 3 or 4 foreign language.

If but one language is offered, the minimum requirement shall be: In Latin, 4 units; in Greek, 3 units; in German, 3 units; in French, 3 units; in Italian, 3 units; in Spanish, 3 units. If two languages are offered, the minimum requirements shall be 2 units in each language.

Courses:

Arts and Sciences, 4 years. Degree: A. B.

Biology (coeducational), 3, 4, or 5 years, as the student wishes.

Admission: 14½ units; 8½ prescribed—3 English, 1 history, 2½ mathematics, 2 foreign language.

Degree: B. S. in Biology.

Music, open to special students only.

Admission: A knowledge of the rudiments of music, ability to play a musical instrument, 1½ units English.

The four-year course leads to a certificate of proficiency.

The degree Mus. Bac. is awarded after one year has elapsed, to those possessing the certificate, upon examination, and the presentation of an original composition.

Towne Scientific School:

Admission: 14½ units; 10 prescribed—3 English, 1 history, 3½ mathematics, ½ physics, 2 French or German. For the course in architecture only 3 units mathematics prescribed.

Courses, 4 years unless otherwise stated.

Architecture, degree, B. S. in Architecture.

Graduate courses leading to M. S. in Architecture one year after B. S.

Two-year special course leading to certificate of proficiency.

Architectural Engineering; degree, B. S. in Architecture.

Chemical Engineering; degree, B. S. in Chemical Engineering.

Chemistry; degree, B. S. in Chemistry.

Civil Engineering; degree, B. S. in Civil Engineering.

Electrical Engineering; degree, B. S. in Electrical Engineering.

Mechanical Engineering; degree, B. S. in Mechanical Engineering.

Wharton School of Finance and Commerce:

Admission: 14½ units; 8½ prescribed—3 English, 1 history, 2½ mathematics, 2 foreign language.

Courses:

Finance and Commerce; 4 years, degree B. S. in Economics.

Special course in business practice and banking, 2 years, leading to certificate of proficiency.

School of Education (College for Teachers. Founded 1914. Coeducational):

Admission: 14½ units; 8½ prescribed—3 English, 2½ mathematics, 1 history, 2 Latin, French, or German.

Course, 4 years. Graduation upon the completion of 64 units of work, 4 of which are in Physical Education. The other 60 units consist of 26 in content subjects, 11 in fundamental professional subjects, 15 in the special subject to be taught, and 8 free electives.

Degree: Bachelor of Science (B. S.) in Education. Graduate courses in Education, leading to A. M. and Ph. D. in the Graduate School.

Graduate School (Coeducational):

Admission: Bachelor's degree from a recognized college in the United States, or the equivalent for foreign institutions.

Degrees:

A. M., M. S.—One year of postgraduate study.

Ph. D.—Three years of postgraduate study; thesis.

The Graduate School offers advanced instruction in the various branches of literature and science. Among the departments which are especially noteworthy may be mentioned: Semitic languages, Latin, English, history, history of religions, philosophy, education, psychology, zoology, and medical sciences.

Law School:

Admission: Bachelor's degree (or equivalent degree) from a recognized college.

Degrees:

LL. B.—Three-year course.

LL. M.—One year after LL. B.; thesis.

School of Medicine (Coeducational):

Admission: 14½ units of secondary school work; 10½ prescribed—3 English, 1 history, 2½ mathematics, 4 foreign language. Two languages, not less than 2 units in each. If Latin is offered, there must be 4 units in that alone, thus raising the number of units prescribed to 12½. Followed by two years of collegiate work.

The following subjects must be taken in college: Chemistry, including both general chemistry and qualitative analysis, 6 units; physics, 4 units; zoology or general biology, 4 units; French or German, 3 units; and at least 13 units made up of subjects which are open to freshmen and sophomores in colleges or universities of recognized standing. The work in the three sciences must include laboratory work performed by the student; and the laboratory notebooks, properly certified, must be submitted.

Degrees:

M. D.—Four-year course.

Dr. P. H.—One year's work in public hygiene, following graduation from a recognized medical school.

Certificate—C. S.—One year's work in public hygiene, as above, for those not holding M. D.

School of Dentistry (Coeducational):

Admission: Graduation from an approved high school or equivalent preparatory course of four academic years.

Degree: D. D. S., four-year course.

School of Veterinary Medicine:

Admission: Graduation from an approved high school or equivalent preparatory school, including at least 8 units of work—5 prescribed; 2 English, 2 mathematics, 1 history.

Degree: V. M. D.—Four-year course.

Expenses:

Tuition—	
Courses in Arts and Sciences, Education, Finance and Commerce, Biology, and Dentistry	$200
Law	200
Medicine, Chemistry, Engineering, and Architecture	200
Graduate School, based on the amount of work taken, not to exceed	150
Veterinary Medicine	100
Music	30
Board and room	200–350
Total annual expense	450–605

Faculty, 667.

Students, 6,930, of whom 265 are from foreign countries.

Of special interest to foreign students.—The Medical School, founded in 1765, is the oldest in the country and one of the best. It is well equipped with museums and laboratories. The University Hospital maintains almost 500 beds, and, in conjunction with the other hospitals throughout the city, offers excellent clinical facilities. In the first two years of the course the fundamental medical sciences are studied; the latter half is devoted to clinical subjects and specialties. Graduate work is offered in public hygiene. The Phipps Institute for the study, prevention, and treatment of tuberculosis furnishes opportunity for research in this particular field.

The course in tropical medicine should interest students from southern countries.

The Wharton School is among the most prominent institutions offering courses in financial and commercial branches. The course of study for the first two years is largely prescribed. In the last two electives are offered in business law, commerce and transportation, economics, finance and accounting, geography and industry, insurance, political science, and sociology.

The School of Architecture holds the highest rank among architectural schools in America.

The School of Dentistry is of high rank, and has drawn many students from abroad. During the first year the student's time is equally divided between dental, histological, and chemical laboratory work. Ample opportunity is provided in the last two for practice in mechanical and operative dentistry.

The School of Veterinary Medicine is well equipped. It maintains a veterinary hospital, and has access to local stockyards, abattoirs, breeding and dairy farms.

Among special departments of study not included in the Wharton School or the other schools just referred to, those of chemistry and biology enjoy wide reputation.

The Christian Association of the University of Pennsylvania conducts an International Students' House at 3905 Spruce Street, Philadelphia, in which the American students and those from other countries by friendly interchange of thought and experience come to know one another's problems and to sympathize with one another's points of view and ideals. The latchstring is out at all times. A certain amount of dormitory capacity is available. The dining room accommodates about 40. The clubrooms of the house are open to engagement by the different student organizations, particularly those of an international character.

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa., a city of approximately 588,343 inhabitants. Founded, 1787; a semi-State institution; coeducational.

The College. Undergraduate.

Admission: 15 units; prescribed—3 English, a principal group of 3 or more units, a secondary group of 2 or more units; remainder elective. Graduation from an approved secondary school required.

Degrees: A. B. and B. S.—Four-year courses.

School of Economics.

Admission: 15 units; 4 prescribed—3 English, 1 history. Graduation from an approved secondary school required.

Degree: B. S. in Economics.

School of Education.

Admission: 15 units; 4 prescribed—3 English, 1 history. Graduation from an approved secondary school required.

Degrees:

A. B. and Bachelor's Diploma in Education—Four-year course.

B. S. and Bachelor's Diploma in Education—Four-year course.

School of Engineering.

Admission: Graduation from an approved secondary school and presentation of the following units: 3 English, 3½ mathematics (1½ algebra, 1½ geometry, ½ trigonometry), 1 history, 2 modern languages, 1 physics.

Degrees: B. S. in C. E., M. E., E. E., R. M. E., San. E., and Chem. E.—Four-year courses in which the cooperative plan is a feature. Under this plan every graduate of the Engineering School must have completed at least two years of supervised practical work.

Higher engineering degrees, conferred after three years of successful work and the presentation of an approved thesis—C. E., M. E., E. E., R. M. E., Chem. E., San. E.

School of Mines.

Admission: Same as for Engineering School (with exception of trigonometry).

Degrees: E. M., Met. E., Pet. E.—Four-year cooperative courses.

School of Chemistry.

Admission: Same as for School of Mines.

Degree: B. Chem.—Four-year course.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees:

M. A., M. S.—One year of graduate study; thesis.

Ph. D.—Three years of graduate study: thesis.

School of Medicine.

Admission: Four-year high-school course plus two years of college work.

Degrees:

M. D.—Four-year course.

B. S. and M. D.—Six-year course, combined collegiate and medical.

School of Law.
  Admission: Four-year high-school course and graduation from college.
  Degree: LL. B.—Three-year course.
School of Dentistry.
  Admission: Completion of four-year high-school course.
  Degree: D. D. S.—Four-year course.
School of Pharmacy.
  Admission: Completion of at least two years of approved secondary school work.
  Degrees:
    Ph. G.—Two-year course.
    Ph. C.—Three-year course.
Expenses:
  Tuition—

The College, School of Education, School of Economics, School of Engineering, School of Mines, Graduate School, School of Chemistry, School of Law	$150
School of Medicine	250
School of Dentistry	200
School of Pharmacy (if paid in full before Oct. 10, $140)	150

  Books, instruments, etc., $10, up.
  Board, per week, $5.50 to $7.00.
  Room, per week, $2.00 to $3.00.
Faculty, 300.
Students, 3,542, of whom 186 are from foreign countries, as follows: Argentina, 7; Austria-Hungary, 19; Bohemia, 2; Brazil, 2; Canada, 12; China, 2; Egypt, 1; England, 13; Germany, 4; Greece, 2; India, 1; Ireland, 2; Italy, 20; Japan, 2; Poland, 5; Rumania, 9; Russia, 78; Scotland, 1; Sweden, 1; Syria, 1; West Indies, 2.

Of special interest to foreign students.—The courses in the scientific and engineering schools are of particular interest to foreign students because of their nature and content. In the School of Engineering an arrangement of the work during the sophomore and junior years enables the student to enter shops, mills, mines, and factories and secure in all two years of practical training with pay. In many instances relationships are formed which enable the student to reenter these establishments after they have completed their university career. In the School of Mines this same feature of cooperative education prevails, and for students engaged in the study of mining a special summer camp has been established in the heart of the mining district of Pennsylvania. Surveying, inspection, and mining are engaged in by means of the cooperative feature of this school.

CLEMSON AGRICULTURAL COLLEGE, Clemson College, S. C., a town of 759 inhabitants. Founded, 1889; a "land-grant" institution.

Admission (on certificate).
  Agricultural course: 12 units; 8 prescribed—3 English, 3 mathematics, 1 history, 1 agriculture.
  Engineering and other courses: 12 units; 7 prescribed—3 English, 3 mathematics, 1 history.
Degree: B. S.—Four-year courses in the following:
  Agriculture, with major subjects in agronomy, botany, chemistry, animal industry, entomology, veterinary science, horticulture, soils, dairying, or agricultural education.

Degree: B. S.—Four-year courses—Continued.
- Chemistry.
- Mechanical engineering.
- Electrical engineering.
- Civil engineering.
- Chemical engineering.
- Textile industry.
- Architecture.
- Industrial education.
- General science, with major subjects in agriculture and industrial arts, natural science, or physics and chemistry.
- In addition to these courses, special short courses are offered in the agricultural and textile departments, but these do not lead to any degree.

Expenses:

Tuition (free to students from South Carolina who are unable to pay)	$40
Room, board, and laundry (9 months)	180
Total annual expense (approximate)	300

Faculty, 64.

Students, 823, of whom 1 is a foreign student, from British West Indies.

Of special interest to foreign students.—In the department of agriculture facilities are offered for studying the phases of the subject especially affecting southern countries. Attention is paid to cultivation and grading of cotton. The textile building, built in the style of a modern mill, affords the student an opportunity to become familiar with many points regarding mill construction, manipulation of cotton fibers, and the study of cotton-mill operation. Close relation is maintained between the college and State agricultural experiment station.

GEORGE PEABODY COLLEGE FOR TEACHERS, Nashville, Tenn., a city of 118,342 inhabitants, and capital of the State. Founded, 1875, as a normal school; in 1877 became Peabody College; in 1909 was reorganized and chartered as a teachers' college; coeducational.

College of Education.

Admission: Four-year high-school course, or the equivalent.

Degree: B. S.—Four-year courses.

Studies are arranged by groups, so that students may be prepared specifically for teaching or supervising agriculture, biology, chemistry, classical and modern languages, primary education, elementary education, rural education, school administration, secondary education, English, geography, public health, history and economics, home economics, industrial arts, international relations, Latin-American relations, music, physical education, psychology.

Graduate School of Education.

Admission: A standard bachelor's degree, or equivalent.

Degrees:
- A. M.—One year of graduate work; thesis.
- Ph. D.—Two years of graduate work, minimum; usually 3 years; dissertation.

Expenses:

Tuition, $2 per credit hour of work taken; per quarter of 12 weeks, approximately	$35– 40
Room and board per month	30– 35
Total annual expense	400–500

Faculty, 89.

Students, 1,750.

Of special interest to foreign students.—Peabody has a large endowment and aims to provide the best possible instruction for workers in all fields of education. The department of industrial arts offers training for teachers of manual arts and also for specialists in wood and metal working, printing, supervision of drawing and handwork; the department of home economics offers courses in almost all lines of women's work in the home, with opportunities for specialization in textiles and sewing, foods and cooking, and home demonstration work.

The Seaman A. Knapp School of Country Life includes courses which aim to train leaders for work in rural communities, in agriculture, animal husbandry, farm demonstration work, food conservation, rural sanitation and health, rural education, community cooperation, etc.

The Correspondence Study Department offers a large number of courses of interest to teachers, supervisors, and school administrators. Regular college credit is granted for work completed by correspondence. This feature is of special value for students located at great distances from Peabody.

Peabody also opens its National Bureau of International Educational Correspondence, which promotes educational letter exchange between the pupils and students of all nations. Students at Peabody have a great opportunity of becoming familiar with this new educational agency.

The College is in session throughout the year, the work being divided into four quarters of about 12 weeks each. A student may materially shorten the number of academic years of residence required for any degree by attendance during the extra summer quarter.

An agreement with Vanderbilt University, whose campus adjoins that of Peabody, enables students registered in either institution to enjoy the advantages of the other without additional charge. Peabody students thus have available for one fee all the facilities of the two institutions, representing assets of nearly $15,000,000.

VANDERBILT UNIVERSITY, Nashville, Tenn., a city of 118,342 inhabitants. Incorporated, 1872; coeducational.

The College. Undergraduate department of arts and sciences.

- Admission: 15 units. For A. B. degree, 14 prescribed—3 English, 3 mathematics, 4 Latin, 3 Greek, 1 history or science. For B. S., 12 prescribed—3 English, 3 mathematics, 4 foreign language, 2 history or science.
- Degrees: A. B., B. S.—Four-year courses.

Graduate Department.

- Admission: Bachelor's degree from recognized college.
- Degrees:
  - M. A., M. S.—One year of postgraduate study; thesis.
  - Ph. D., D. Sc.—Three years of postgraduate study; thesis.

Engineering Department.

- Admission: 15 units, as for B. S. degree.
- Degrees:
  - B. E.—Completion of four-year undergraduate courses in civil engineering, mechanical engineering, electrical engineering, chemical engineering.
  - C. E.—One year of postgraduate work in civil engineering; thesis.
  - M. E.—One year of postgraduate work in mechanical engineering; thesis.
  - E. E.—One year of postgraduate work in mechanical engineering and physics; thesis.

Biblical Department.

Admission: No definite requirement. Anyone judged capable of doing the work is admitted, provided he is well recommended.

Degrees: B. D. (A bachelor's degree from a recognized college is a prerequisite).—Three years of postgraduate study; thesis. To those not possessing a bachelor's degree, who complete courses in the Biblical Department, a diploma is awarded.

Law Department.

Admission: 14 units; 6 prescribed—3 English, 2 mathematics, 1 history.

Degree: LL. B.—Three-year course.

Medical Department.

Admission: One year of collegiate work, including physics, chemistry, biology, and a modern language.

Degree: M. D.—Four-year course.

Pharmacy Department.

Admission: 14 units; 8 prescribed—2 English, 2 mathematics, 2 foreign language, 2 history or science.

Degrees:

- Ph. G.—Two-year course.
- B. S. (in Pharm.).—Four-year course.

Dentistry Department.

Admission: Graduation from an approved secondary school:

Degree: D. D. S.—Four-year course.

Expenses:

Tuition (including matriculation and library fees)—

Biblical Department	$25
Pharmacy Department	70
Academic and Engineering Departments	105
Law and medicine	150
Dentistry Department	175
Board and room, per month	15–18
Total annual expense	300–417

Faculty, 120.

Students, 1,000, of whom 16 are from foreign countries, as follows: China, 4; San Salvador, 1; Hawaii, 2; Japan, 5; Panama, 2; Cuba, 1; Canada, 1.

Of special interest to foreign students.—The thorough courses offered by the Department of Dentistry, and the excellent equipment, place it among the high-grade dental schools of the country.

Vanderbilt is now affiliated with the George Peabody College for Teachers, and students registering in either institution may, for the single fee, avail themselves of all advantages and opportunities for instruction offered by the other.

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS, College Station, Texas, five miles from Bryan, a town of 6,307 inhabitants. Founded, 1876; a "land-grant" institution; for men.

Undergraduate courses.

School of Engineering.

Admission: 15 units; 6 prescribed—3 English, 3 mathematics.

Degree: B. S.—General courses of four years in following: Architecture, chemical engineering, civil engineering, electrical engineering, mechanical engineering, textile engineering, industrial education.

Undergraduate courses—Continued.

School of Agriculture.

Admission: 15 units; 6 prescribed—3 English, 3 mathematics.

Degree: B. S.—General courses of four years in following: Agricultural chemistry, agricultural education, agricultural engineering, agronomy, animal husbandry, biology, dairy husbandry, entomology, horticulture, landscape art.

School of Veterinary Medicine.

Admission: 15 units; 6 prescribed—3 English, 3 mathematics.

Degree: D. V. M.—Four-year course.

Graduate Courses:

Admission: Bachelor's degree from a recognized college.

Degrees: M. S., Ch. E., C. E., E. E., M. E.—One year of graduate work; thesis.

Noncollegiate two-year courses and short courses.

Faculty, 105.

Students, 1,152.

Expenses, estimated at about $300 per year.

UNIVERSITY OF TEXAS, Austin, Texas, a city of 34,876 inhabitants. Founded, 1883; coeducational.

College of Arts (undergraduate).

Admission: 15 units; 10 prescribed—3 English, 2 history, 3 mathematics, 2 in *one* foreign language.

Degrees:

B. A.—Four-year course.

B. B. A. (Bachelor of Business Administration)—Four-year course.

B. J. (Bachelor of Journalism)—Four-year course.

B. S. in H. E. (Bachelor of Science in Home Economics)—Four-year course.

School of Education.

Admission: One year's work in the College of Arts, or its equivalent.

Degrees: None. Work counts toward B. A. in College of Arts.

College of Engineering.

Admission: 15 units, as in College of Arts.

Undergraduate courses, four years:	Degrees.
Architecture	B. S. in Architecture.
Architectural engineering	B. S. in Architectural Engineering.
Chemical engineering	B. S. in Chemical Engineering.
Civil engineering	B. S. in Civil Engineering.
Electrical engineering	B. S. in Electrical Engineering.
Mechanical engineering	B. S. in Mechanical Engineering.

Graduate courses.—One year of postgraduate study and research.

Admission: Bachelor's degree in the subject to be pursued.

Architecture	M. S. in Architecture.
Architectural engineering	M. S. in Architectural Engineering.
Civil Engineering	C. E.
Electrical engineering	E. E.

College of Mines and Metallurgy (at El Paso).

Admission: 14½ units.

Degree: Mining Engineer.—Four-year course.

School of Medicine (at Galveston).
  Admission: Two years' collegiate work.
  Degree: M. D.—Four-year course.

College of Pharmacy (at Galveston).
  Admission: Graduation from an accredited high school.
  Degree: Ph. G.—Two-year course.

School of Law.
  Admission: Two years' collegiate work.
  Degree: LL. B.—Three-year course.

Graduate School.
  Admission: Bachelor's degree from a recognized college.
  Degrees:
    A. M.—One year of postgraduate study; thesis.
    M. B. A.—One year of postgraduate study; thesis; successful business experience.
    M. J.—One year of postgraduate study; thesis.
    Ph. D.—Three years of postgraduate study; thesis.

Expenses.
  Tuition, none.
  Fees range between $25 and $75 in various colleges and schools.
  Room and board cost between $30 and $50 per month.
  Many students earn their way.

Faculty, 301.

Students, 4,148, of whom 34 are from foreign countries, as follows: England 3, Ireland 1, Scotland 1, Canada 1, Austria 2, Bohemia 1, Germany 6, Poland 1, Serbia 1, Russia 4, Sweden 2, Brazil 1, Mexico 9.

RANDOLPH-MACON WOMAN'S COLLEGE, Lynchburg, Va., a city of 30,070 inhabitants. Founded, 1893; for women only.

Admission: 15 units; 9½ prescribed—3 English, 2½ mathematics, 4 Latin.

Degrees:
  A. B.—Four-year course.
  A. M.—One year after A. B.
  Certificates of proficiency are awarded to those completing courses in music or art.

Expenses:

Tuition	$140
(Additional charges for courses in art or music.)	
Board	350
Total annual expenses	490–650

Faculty, 50.

Students, 618.

UNIVERSITY OF VIRGINIA, Charlottesville, Va., a city of 10,688 inhabitants, at the junction of the Chesapeake & Ohio and the Southern Railroads. Founded, 1819.

The College. Undergraduate department.
  Admission: 15 units; 10½ prescribed—3 English, 2½ mathematics, 1 history; for A. B., 4 Latin; for B. S., 4 modern languages.
  Degrees: A. B. and B. S.—Four-year courses. If the student does sufficient work in one of the departments of natural or mathematical sciences the vocational B. S. may be conferred, with special mention of that subject in which he has specialized.

Department of Graduate Studies.
Admission: Bachelor's degree from a recognized college.
Degrees:
M. A. and M. S.—One year of graduate study.
Ph. D.—Three years of graduate study; thesis.

Department of Law.
Admission: 15 units; 6½ prescribed—3 English, 2½ mathematics, 1 history.
Degree: LL. B.—Three-year course.

Department of Medicine.
Admission: Two years of collegiate work.
Degree: M. D.—Four-year course.

Department of Engineering.
Admission: 15 units; 7½ prescribed—3 English, 3½ mathematics, 1 history.
Degrees: C. E., M. E., E. E., E. M., Ch. E.—Four-year courses; thesis.

Expenses:

Tuition, free (in college and graduate departments) to students from Virginia—	
In college	$135
In graduate department	135
In departments of law and medicine	135
In department of engineering—	
Students from Virginia	95
Students from outside Virginia	135
University fee	40
(For Virginians in college and graduate departments)	20
Board (university commons), per month	18
Board (outside university), per month	20–30
Room (university dormitory)	50–135
Room (outside university), per month	5–25
Total annual expense	430–650

Faculty, 73.

Students, 1,207, of whom 5 are from foreign countries, as follows: Nicaragua, 1; Cuba, 3; Japan, 1.

Of special interest to foreign students.—The University of Virginia owed its beginning to Thomas Jefferson. The memory of Jefferson and the ideals which he set form the university's strongest tradition. His educational philosophy is still to some extent preserved in its curricula and organization.

The Medical School has laboratory facilities for special research work. Clinical instruction is provided for at the University of Virginia Hospital and Dispensary, and in connection with the hospital the university maintains a training school for nurses.

STATE COLLEGE OF WASHINGTON, Pullman, Wash., a town of 4,000 inhabitants. Founded, 1890; a "land-grant" institution; coeducational.

Undergraduate Courses.
College of Agriculture.
Admission: 15 units from accredited high school.
Degree: B. S. in Agriculture—Four-year course.
College of Mechanic Arts and Engineering.
Admission: Same as in College of Agriculture.
Degrees: B. S. in Civil, Mechanical, Electrical, and Hydro-Electrical Engineering—Four-year courses.

Undergraduate courses—Continued.
  College of Home Economics.
    Admission: Same as in College of Agriculture.
    Degree: B. S.—Four-year course.
  College of Science and Arts.
    Admission: Same as in College of Agriculture.
    Degrees:
      B. A. and B. S.—Four-year courses.
      B. S. in Chem. Eng.—Four-year course.
  College of Veterinary Science.
    Admission: Same as in College of Agriculture.
    Degrees:
      B. S. in Veterinary Science—Four-year course.
      D. V. M.
  School of Education.
    Admission: Same as in College of Agriculture.
    Degree: B. A. in Education—Four-year course.
  School of Mines.
    Admission: Same as in College of Agriculture.
    Degree: B. S.—Four-year course (mining and metallurgy).
  School of Music and Applied Design.
    Admission: Same as in College of Agriculture.
    Degree: B. A. in Music—Four-year course.
  School of Pharmacy:
    Admission: Same as in College of Agriculture.
    Degrees:
      Ph. G.—Two-year course.
      Ph. C.—Three-year course.
Graduate Courses:
  Admission: Bachelor's degree from a recognized college.
  Degrees: M. A., M. S., C. E., E. E., E. M.—One year of postgraduate study; thesis; graduates of State College three years of professional experience and thesis.
Expenses:
  Tuition, none.

Board, per week	$5.00– $7.00
Room, per month	4.50– 16.00
Entrance and incidental fees	21.00– 30.00
Annual expense	350.00–500.00

Faculty, 150.
Students, 2,022, of whom 18 are from foreign countries, as follows: Philippines, 7; Hawaii, 1; Chile, 1; England, 1; Japan, 4; France, 1; Russia, 1; Holland, 1; Central America, 1.

UNIVERSITY OF WASHINGTON, Seattle, Wash., a city of 315,312 inhabitants. Founded, 1861; coeducational.

College of Liberal Arts. Undergraduate.
  Admission: 15 units; 11 or 12 prescribed—3 English, 2½ mathematics, 1 science, 2 foreign language, 1 history, ½ solid geometry, and 1 science or 2 foreign language.
  Degree: A. B.—Four-year course. Includes general course, home economics, journalism, library economy, and commerce.

College of Science.
  Admission: 15 units; 11 prescribed—3 English, 3 mathematics, 2 science, 2 foreign language, 1 history.
  Degrees:
    B. S.—Four-year course.
    B. S. in Home Economics—Four-year course.

College of Business Administration.
  Admission: 15 units; 7 prescribed—3 English, 2 mathematics, 2 history.
  Degrees:
    Bachelor of Business Administration—Four-year course.
    Master of Business Administration—One year of postgraduate work after award of bachelor's degree.

College of Education.
  Admission: As in College of Liberal Arts.
  Degrees:
    Bachelor of Education—Four-year course.
    M. A. or M. S. in Education—One year after A. B. or B. S.
    Diplomas are granted, valid in all public schools in the State.

College of Engineering.
  Admission: 15 units; 10 prescribed—3 English, 3 mathematics, 1 science, 2 foreign language, 1 history.
  Degrees:
    B. S. in C. E., B. S. in E. E., B. S. in M. E., B. S. in Ch. E.—Four-year courses.

      The college also offers another four-year course in each of the departments to meet the need for a broader foundation in general training and leading simply to the B. S. degree.

    M. S. in C. E., M. S. in E. E., M. S. in M. E., M. S. in Ch. E.—One year of postgraduate study after baccalaureate degree; thesis.
    C. E., E. E., M. E.—These are professional degrees conferred without resident study upon holders of the bachelor's or master's degrees after at least two years and one year, respectively, of successful professional work and the presentation of a thesis.

College of Fine Arts.
  Admission: As in College of Liberal Arts. For courses in music an additional requirement of four years in music.
  Degrees:
    B. Mus.—Four-year course.
    B. Arch.—Four-year course.
    Certificates of Proficiency for those not having fulfilled requirements for degree.
    Certificate of Proficiency, two-year course in art.

College of Fisheries.
  Admission: 15 units. (See College of Science).
  Degree: B. S.—Four-year course.

College of Forestry.
  Admission: 15 units; 11 prescribed, as in College of Science, except that 1 unit botany is required instead of chemistry or biology.
  Degrees:
    B. S.—Four-year course.
    M. S. F.—One year after bachelor's degree.

School of Journalism.

Admission: Two years of collegiate work.

Degree: B. A.—Four-year course including two years' collegiate work for admission.

The Puget Sound Biological Station (summer only).

(Cooperative under direction of the University of Washington.)

Located at Friday Harbor, Wash.

Admission: Ability to carry on marine biology.

Tuition, $10.

Living expenses for six weeks moderate.

School of Law.

Admission: Two years of collegiate work.

Degree: LL. B.—Three-year course.

College of Mines.

Admission: 15 units, as in College of Science.

Degrees:

B. S.—Four-year course in general science.

B. S. in Mining Engineering.—Four-year course.

B. S. in Geology and Mining.—Four-year course.

B. S. in Metallurgical Engineering.—Four-year course.

B. S. in Coal Mining Engineering.—Four-year course.

M. S. in Mining Engineering.—One year postgraduate study; thesis.

E. M., Met. E.—Professional degress, conferred without resident study upon holders of the bachelor's degree, who have been engaged in professional work at least three years and present a thesis.

College of Pharmacy.

Admission: 15 units; 9½ prescribed—3 English, 2 foreign language, 2½ mathematics, 1 science, 1 history.

Degrees:

Ph. C.—Two-year course.

B. S.—Four-year course.

M. S. in Pharmacy.—One year of postgraduate work after B. S.; thesis.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees:

M. A. or M. S.—One year of postgraduate study; thesis.

Ph. D.—At least 3 years of postgraduate study; thesis. Limited at present to three departments: Chemistry, English, Botany.

Expenses:

Tuition (Colleges of Liberal Arts, Science, Education, Engineering, Fine Arts, Forestry, and Mines) ($10 per quarter of 12 weeks)	$30.00
College of Law	60.00
Biological Station	10.00
Board, at university, per month	22.50
Room, at university, per year	54.00
Board and room, outside university, per month	23.00–30.00
Minimum annual expense	350.00

Faculty, 217.

Students, 3,075, of whom 86 are from foreign countries, as follows: Japan, 9; Philippines, 8; Canada, 30; China, 7; Hawaii, 4; Alaska, 21; Finland, 1; Russia, 2; Sweden, 1; Scotland, 1; Cuba, 1; Australia, 1.

Of special interest to foreign students.—Seattle is the center of the timber industry of the Northwest and furnishes opportunities for observation of the practical side of work in forestry. Examples of forest management may be seen in the near-by national forests. The curricula allow specialization in forest service and State work, logging engineering, and forest products, and advanced courses are given in dendrology, silviculture, wood technology, timber physics, and wood preservation.

The State of Washington and the adjoining country provide excellent opportunities to students in the College of Mines to become familiar with mining and metallurgical operations and mining machinery. The United States Bureau of Mines conducts a mines experiment station on the campus, and in connection with the College of Mines a number of graduate research fellowships are provided. Application should be made before May 15 to the Dean of the College of Mines.

The College of Fisheries meets the demands of the large fishery industry of the United States for technically trained experts and directors. The Puget Sound and the near-by Alaskan fisheries furnish unexcelled facilities for obtaining practical experience during vacations.

The College of Business Administration has made arrangements with Seattle business houses to accept a certain number of Oriental students for part-time work. Chinese students able to speak English and with special qualifications for the line of business they intend to pursue should make application to the Dean of the College of Business Administration before May 13.

The university will, during 1919–20, accept a number of Mexican students in accordance with plans approved by the Minister of Education of Mexico.

UNIVERSITY OF WISCONSIN, Madison, Wis., a city of 38,378 inhabitants, and the capital of Wisconsin. Founded, 1848; a "land-grant" institution; coeducational.

College of Letters and Science. Undergraduate.
- Admission: 15 units; 6 or 7 prescribed—2 or 3 English, 2 mathematics, 2 foreign language, science, or history.
- Degrees:
  - A. B.—Four-year course; thesis, or special research, with report.
  - Ph. B. (General course)—No foreign language required. Four-year course; thesis, or special research, with report.
  - Ph. B. (Course for normal school graduates)—Two-year course in philosophy and education for normal school graduates; thesis, or special research, with report.
- Course in Chemistry, B. S.—Four-year course; thesis, or special research, with report.
- Course in Commerce, B. A.—Four-year course; thesis, or special research, with report.
- Course in Journalism, B. A.—Four-year course; thesis, or special research, with report.
- Course in Pharmacy.
  - Admission: To the two-year course; graduation from an approved high school. 1919–20 nongraduates may be admitted who are at least 18 years old and who can present evidence of two years' high-school work and practical experience.
    - To the four-year course, 15 units, as above.
  - Degrees:
    - Graduate in Pharmacy—Two-year course.
    - B. S.—Four-year course; thesis, or special research, with report.

College of Letters and Science. Undergraduate—Continued.

Course for the Training of Teachers.

Admission: Two years' collegiate work.

Degree: B. A. or B. S.

Certificate: Granted on completion of major subject and special courses in philosophy, education, and departmental teacher's training courses.

Library School.

Admission: To independent library course of one year; competitive examinations in history, general literature, current events, and German or French. High School graduation or its equivalent required for admission to examinations.

Certificate of Library School.

Admission: To joint library course—96 credits in College of Letters and Science. Must pass entrance examinations in Library School.

Degree: B. A. and certificate of Library School.

Admission: To Teacher-Librarian course. Open to juniors and seniors who are prospective teachers.

Medical School.

Admission: Two years' collegiate work. The school offers only the first two years of a medical course.

Degree: B. S., Medical Science Course. Thesis.

School of Music.

Admission: 15 units, as in College of Letters and Science. Ability to play piano or violin and to read music.

Degree: Bachelor of Music—Four-year course. For those taking the two-year course for supervisors of music in public schools a certificate is granted.

College of Engineering. Undergraduate.

Admission: 15 units; 7 prescribed—2 English, 3 mathematics, 2 foreign language.

Degree: B. S. (with specific mention of course taken). Four-year course in civil, mechanical, electrical, chemical, or mining engineering; thesis, or special research, with report.

College of Agriculture. Undergraduate.

Admission: 15 units, as in College of Letters and Science.

Degrees: Thesis, or special research, with report required.

B. S. (Agriculture)—Four-year course in agriculture.

B. S. (Home Economics)—Four-year course in home economics, with the following majors: General, food, textiles, hospital administration, bacteriology.

B. S. (Home Economics)—Four-year vocational course for the training of teachers in home economics.

Certificates: Graduate in Agriculture—Two-year course in agriculture. Graduate in Home Economics—Two-year course for training vocational teachers in home making.

Law School.

Admission: Two years' collegiate work.

Degree: LL. B.—Three-year course and at least six months' clerkship in an accredited law office.

Graduate School.

Admission: Bachelor's degree from a recognized college.

Degrees:

M. A., M. S., Ph. M.—A minimum of one year of postgraduate study.

C. E., M. E., E. E., Ch. E., E. M.—One year of postgraduate study in engineering, and thesis. Graduates of the College of Engineering of the University of Wisconsin who have spent three years in professional work—at least one of them in a responsible position—and who present a thesis, may also receive the advanced engineering degree, without resident study.

Ph. D.—At least three years' postgraduate study; thesis.

M. P. H.—One year's postgraduate work in public health for those holding M. D. from an approved medical school.

Dr. P. H.—Two years' postgraduate work in public health for those holding M. D. from an approved medical school.

University Extension Division.

Several hundred correspondence study courses, many of which may be taken by properly qualified students with a view of accumulating university credit toward a degree, are available in the University of Wisconsin through postal instruction. Special bulletins of the Extension Division describe these courses in full, giving facts, not only with reference to the content of the course, but also information as to instruction fees, textbook and laboratory requirements, and the number of credits involved.

Expenses (for resident study):

Tuition (free to residents of Wisconsin)	$124
Incidental fee	30
Library School—	
Resident tuition per year	50
Nonresident tuition per year	124
Room at university	75 to 160
Board at university	180 to 240

Faculty, 751, of whom 194 assistants and lecturers average half time.

Students, 5,318,[a] of whom 69[a] are from foreign countries, as follows: China, 36; Canada, 9; Philippine Islands, 3; Australia, 2; Chile, 2; Hawaiian Islands, 2; Japan, 2; Norway, 2; Alaska, 1; and one from each of the following countries: Argentina; Austria; Belgium; England; India; Java; Peru; Porto Rico; Spain; and Uruguay.

Of special interest to foreign students.—Graduate and undergraduate work. The special course in chemistry is arranged to meet the needs of those planning to enter upon chemistry as a life work, and includes a general course, and courses for the industrial, agricultural, soil, physiological, and sanitary or food chemist. The work of the first year is the same for all these groups. The course in pharmacy is especially strong, and the university is one of the few institutions to give systematic consideration to plant chemistry.

The work in journalism includes courses to familiarize the student with present political, social, and economic conditions, and with his own and foreign literatures; to develop his skill in writing; and to give the necessary technical instruction. Opportunity for study is offered to those interested in professional and trade journalism.

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[a] Figures for 1916–17.

In cooperation with the Legislative Reference Department of the Wisconsin Free Library Commission, the Library School also offers a special course of training for legislative and municipal reference work and the various sociological phases of library service. The course is intended for college graduates with special aptitude and personal qualifications for this type of library service who have a definite preparation in political science, economics, and sociology.

The Department of Physics, which has one of the largest and best equipped laboratories in the country, offers an unusual opportunity for research.

In connection with the work in the College of Agriculture, special mention should be made of the courses in animal husbandry, dairying and dairy husbandry, and soils. There is opportunity for research work in almost all departments and close association is maintained with the State experiment station.

The Forest Products Laboratory is conducted in cooperation with the work of the university, and offers especially valuable opportunities for engineering students to carry on advanced study and research pertaining to the utilization of forest products.

The university is the culmination of the free educational system of Wisconsin, and sustains a similar relation to the high schools that the latter sustain to the primary and grammar schools. Moreover, the university maintains the closest connection with all the interests of the State, and through its extension service aims to provide a better education for all the people.

SECTION VII.

STATISTICAL TABLES FOR THE YEAR 1918.

TABLE 1.—*State universities.*

(Names of universities followed by an asterisk (*) include the agricultural and mechanical colleges.)

Location	Institution.	For men, for women, or coeducational.	Faculty—collegiate and professional.	Students—collegiate, graduate, and professional.	Income.	Endowment.
1	2	3	4	5	6	7
University, Ala	University of Alabama	Coed	82	805	$177,431	$742,806
Tucson, Ariz	University of Arizona*	Coed	64	442	511,072	10,500
Fayetteville, Ark	University of Arkansas*	Coed	136	569	368,474	132,666
Berkeley, Calif	University of California*	Coed	727	7,249	3,732,986	5,490,430
Boulder, Colo	University of Colorado	Coed	209	1,293	488,000	80,000
Gainesville, Fla	University of Florida*	Men	51	310	281,906	....
Athens, Ga	University of Georgia*	Men	82	725	475,647	379,168
Moscow, Idaho	University of Idaho*	Coed	103	453	387,575	1,500,000
Urbana, Ill	University of Illinois*	Coed	794	5,087	3,075,409	649,012
Bloomington, Ind	Indiana University	Coed	206	2,659	754,582	878,400
Iowa City, Iowa	State University of Iowa	Coed	260	3,303	1,722,594	336,813
Lawrence, Kans	University of Kansas	Coed	243	2,279	920,860	....
Lexington, Ky	University of Kentucky*	Coed	100	719	627,247	187,185
Baton Rouge, La	Louisiana State University and Agricultural and Mechanical College.*	Coed	70	752	368,712	318,713
Orono, Me	University of Maine*	Coed	95	913	375,129	252,050
Ann Arbor, Mich	University of Michigan	Coed	438	5,932	2,647,833	1,326,412
Minneapolis, Minn	University of Minnesota*	Coed	538	4,972	2,803,703	1,785,570
University, Miss	University of Mississippi	Coed	32	377	117,462	700,000
Columbia, Mo	University of Missouri*	Coed	224	3,188	1,118,961	1,309.339
Missoula, Mont	University of Montana	Coed	56	496	305,092	....
Lincoln, Nebr	University of Nebraska*	Coed	240	3,292	1,717,702	871,507
Reno, Nev	University of Nevada*	Coed	48	324	274,275	330,554
Albuquerque, N. Mex	University of New Mexico	Coed	24	177	122,269	20,721
Chapel Hill, N. C	University of North Carolina	Coed	93	855	325,427	216,548
University, N. Dak	University of North Dakota	Coed	70	666	290,006	2,051,150
Athens, Ohio	Ohio University	Coed	66	837	336,297	153,133
Columbus, Ohio	Ohio State University*	Coed	447	4,496	2,209,386	1,035,678
Oxford, Ohio	Miami University	Coed	74	836	268,677	118,107
Norman, Okla	University of Oklahoma	Coed	190	1,050	971,944	3,670,000
Eugene, Oreg	University of Oregon	Coed	142	1,043	311,502	55,000
Columbia, S. C	University of South Carolina	Coed	32	337	159,616	....
Vermilion, S. Dak	University of South Dakota	Coed	51	466	353,411	....
Knoxville, Tenn	University of Tennessee*	Coed	218	833	1,344,096	405,000
Austin, Tex	University of Texas	Coed	152	2,267	1,105,778	2,000,000
Salt Lake City, Utah	University of Utah	Coed	111	1,052	331,909	20,000
Burlington, Vt	University of Vermont and State Agricultural College.*	Coed	104	583	328,087	1,063,525
Charlottesville, Va	University of Virginia	Men	98	780	289,754	2,277,775
Seattle, Wash	University of Washington	Coed	217	2,771	874,154	5,000,000
Morgantown, W. Va	West Virginia University*	Coed	117	890	685,837	116,000
Madison, Wis	University of Wisconsin*	Coed	456	4,230	2,748,287	704,399
Laramie, Wyo	University of Wyoming*	Coed	41	193	305,584	239,339

TABLE 2.—*Agricultural and mechanical colleges not connected with State universities.*

Location.	Institution.	For men, or coeducational.	Faculty—collegiate and professional.	Students—collegiate, graduate, and professional.	Income.	Endowment.
1	2	3	4	5	6	7
Auburn, Ala.	Alabama Polytechnic Institute.	Coed	87	648	$281,683	$284,500
Fort Collins, Colo.	Colorado State Agricultural College.	Coed	70	536	373,633	202,783
Storrs, Conn.	Connecticut Agricultural College.	Coed	35	137	451,277	256,000
Newark, Del.	Delaware College.	Coed	44	336	391,138	286,000
Lafayette, Ind.	Purdue University.	Coed	186	1,672	1,204,183	440,000
Ames, Iowa	Iowa State College of Agriculture and Mechanic Arts.	Coed	322	2,272	2,028,870	689,530
Manhattan, Kans.	Kansas State Agricultural College.	Coed	195	1,533	1,211,993	491,746
College Park, Md.	Maryland State College of Agriculture.	Men	49	179	416,124	124,944
Amherst, Mass.	Massachusetts Agricultural College.	Coed	74	441	651,115	361,000
East Lansing, Mich.	Michigan Agricultural College.	Coed	161	1,140	1,004,760	991,241
Agricultural College, Miss.	Mississippi Agricultural and Mechanical College.	Coed	46	820	545,321	239,787
Bozeman, Mont.	Montana College of Agriculture and Mechanic Arts.	Coed	26	494	426,935	680,250
Durham, N. H.	New Hampshire College of Agriculture and Mechanic Arts.	Coed	73	554	347,348	950,000
New Brunswick, N. J.	Rutgers College.	Men	43	461	458,409	891,277
State College, N. Mex.	New Mexico College of Agriculture and Mechanic Arts.	Coed	26	43	280,525	....
Ithaca, N. Y.	New York State College of Agriculture (Cornell University)	Coed	[98]833	[98] 4,160	[98]2,842,264	14,221,996
West Raleigh, N. C.	North Carolina College of Agriculture and Engineering.	Men	60	464	396,553	125,000
Agricultural College, N. Dak.	North Dakota Agricultural College.	Coed	55	421	471,901	1,333,777
Stillwater, Okla.	Oklahoma Agricultural and Mechanical College.	Coed	34	505	527,752	....
Corvallis, Oreg.	Oregon State Agricultural College.	Coed	78	1,597	734,149	202,663
State College, Pa.	Pennsylvania State College.	Coed	255	2,044	1,066,352	500,000
Kingston, R. I.	Rhode Island State College.	Coed	28	243	162,256	50,000
Clemson College, S. C.	Clemson Agricultural College.	Men	68	764	451,664	154,439
Brookings, S. Dak.	South Dakota State College of Agriculture and Mechanic Arts.	Coed	61	335	706,967	390,941
College Station, Tex.	Agricultural and Mechanical College of Texas.	Men	105	834	1,418,080	209,000
Logan, Utah	Agricultural College of Utah.	Coed	86	498	365,881	....
Blacksburg, Va.	Virginia Agricultural and Mechanical College and Polytechnic Institute.	Men	55	457	518,515	344,312
Pullman, Wash.	State College of Washington.	Coed	54	1,565	742,911	906,666

[98] Entire university

TABLE 3.—*Schools of mines not connected with universities.*

Location.	Institution.	For men or coeducational.	Collegiate faculty.	Collegiate and graduate students.	Income.	Endowment.
1	2	3	4	5	6	7
Golden, Colo	Colorado School of Mines	Men	18	164	$116,746	....
Houghton, Mich	Michigan College of Mines	Men	21	69	84,958	....
Butte, Mont	Montana State School of Mines.	Coed	7	52	39,484	....
Socorro, N. Mex	New Mexico School of Mines	Coed	8	18	45,653	....
Rapid City, S. Dak	South Dakota State School of Mines.	Coed	13	46	43,495	....

TABLE 4.—*Technological schools independent of university organization.*

Location.	Institution.	For men or coeducational.	Collegiate faculty.	Collegiate and graduate students.	Income.	Endowment.
1	2	3	4	5	6	7
Pasadena, Calif	California College of Technology	Men	35	193	$105,674	$592,328
Atlanta, Ga	Georgia School of Technology.	Men	75	891	203,603	2,000,000
Chicago, Ill	Armour Institute of Technology.	Men	59	469	223,630	2,500,000
Terre Haute, Ind	Rose Polytechnic Institute	Men	16	200	43,850	850,000
Cambridge, Mass	Massachusetts Institute of Technology.	Coed	234	1,634	1,853,000	9,616,000
Lowell, Mass	Lowell Textile School	Coed	21	122	102,629	....
Worcester, Mass	Worcester Polytechnic Institute.	Men	45	429	186,687	948,875
Hoboken, N. J	Stevens Institute of Technology.	Men	41	518	215,925	1,550,000
Alfred, N. Y	New York State School of Clay-Working and Ceramics.	Coed	6	45	....	....
Brooklyn, N. Y	Polytechnic Institute of Brooklyn.	Men	35	816	148,571	804,118
Potsdam, N. Y	Clarkson College of Technology.	Men	9	79	22,286	356,500
Troy, N. Y	Rensselaer Polytechnic Institute.	Men	57	588	313,458	1,571,452
Cleveland, Ohio	Case School of Applied Science.	Men	37	442	215,643	2,511,360
Philadelphia, Pa	Drexel Institute	Coed	48	524	204,514	2,000,000
Pittsburgh, Pa	Carnegie Institute of Technology.	Coed	218	1,432	718,569	9,150,000

Medical colleges rated as class A by the Council on Medical Education of the American Medical Association.

ALABAMA.

University of Alabama School of Medicine	Tuscaloosa.

CALIFORNIA.

Leland Stanford Junior University School of Medicine	San Francisco.
University of California Medical School	San Francisco.

COLORADO.

University of Colorado School of Medicine	Boulder-Denver.

CONNECTICUT.

Yale University School of Medicine	New Haven.

DISTRICT OF COLUMBIA.

Georgetown University School of Medicine	Washington.
George Washington University Medical School	Washington.
Howard University School of Medicine	Washington.

GEORGIA.

Emory University School of Medicine	Atlanta.
University of Georgia Medical Department	Augusta.

ILLINOIS.

Northwestern University Medical School	Chicago.
Rush Medical College (University of Chicago)	Chicago.
University of Illinois College of Medicine	Chicago.

INDIANA.

Indiana University School of Medicine	Bloomington-Indianapolis.

IOWA.

State University of Iowa College of Medicine	Iowa City.

KANSAS.

University of Kansas School of Medicine	Lawrence-Rosedale.

KENTUCKY.

University of Louisville Medical Department	Louisville.

LOUISIANA.

Tulane University of Louisiana School of Medicine	New Orleans.

MARYLAND.

Johns Hopkins University Medical Department	Baltimore.
University of Maryland School of Medicine and the College of Physicians and Surgeons	Baltimore.

MASSACHUSETTS.

Boston University School of Medicine	Boston.
Medical School of Harvard University	Boston.
Tufts College Medical School	Boston.

MICHIGAN.

Detroit College of Medicine and Surgery	Detroit.
University of Michigan Medical School	Ann Arbor.
University of Michigan Homeopathic Medical School	Ann Arbor.

MINNESOTA.

University of Minnesota Medical School	Minneapolis.

MISSISSIPPI.

University of Mississippi School of Medicine [94]	Oxford.

MISSOURI.

St. Louis University School of Medicine	St. Louis.
University of Missouri School of Medicine [94]	Columbia.
Washington University Medical School	St. Louis.

NEBRASKA.

John A. Creighton Medical College	Omaha.
University of Nebraska College of Medicine	Omaha.

NEW HAMPSHIRE.

Dartmouth Medical School [94]	Hanover.

NEW YORK.

Albany Medical College	Albany.
Columbia University College of Physicians and Surgeons	New York City.
Cornell University Medical College	New York City.
Long Island College Hospital	Brooklyn.
Syracuse University College of Medicine	Syracuse.
University and Bellevue Hospital Medical College	New York City.
University of Buffalo Department of Medicine	Buffalo.

NORTH CAROLINA.

University of North Carolina School of Medicine [94]	Chapel Hill.
Wake Forrest College School of Medicine [94]	Wake Forest.

NORTH DAKOTA.

University of North Dakota School of Medicine [94]	University.

OHIO.

Ohio State University College of Medicine	Columbus.
University of Cincinnati College of Medicine	Cincinnati.
Western Reserve University School of Medicine	Cleveland.

OREGON.

University of Oregon Medical School	Portland.

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[94] Gives only the first two years of the medical course.

PENNSYLVANIA.

Hahnemann Medical College and Hospital	Philadelphia.
Jefferson Medical College of Philadelphia	Philadelphia.
University of Pennsylvania School of Medicine	Philadelphia.
University of Pittsburgh School of Medicine	Pittsburgh.
Woman's Medical College of Pennsylvania	Philadelphia.

SOUTH CAROLINA.

Medical College of the State of South Carolina	Charleston.

SOUTH DAKOTA.

University of South Dakota College of Medicine[94]	Vermilion.

TENNESSEE.

University of Tennessee College of Medicine	Memphis.
Vanderbilt University Medical Department	Nashville.

TEXAS.

Baylor University College of Medicine	Dallas.
University of Texas Department of Medicine	Galveston.

UTAH.

University of Utah School of Medicine[94]	Salt Lake City.

VERMONT.

University of Vermont College of Medicine	Burlington.

VIRGINIA.

Medical College of Virginia	Richmond.
University of Virginia Department of Medicine	Charlottesville.

WEST VIRGINIA.

West Virginia University School of Medicine[94]	Morgantown.

WISCONSIN.

Marquette University School of Medicine	Milwaukee.
University of Wisconsin Medical School[94]	Madison.

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[94] Gives only the first two years of the medical course.

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33. Educational directory, 1920–21.
34. Statistics of universities, colleges, and professional schools for 1917–18. Advance sheets from the Biennial Survey of Education in the United States, 1916–1918. H. R. Bonner.
35. Agriculture in secondary schools. A report of the Commission on the Reorganization of Secondary Education, appointed by the National Education Association.
36. Preliminary survey of the schools of the District of Columbia.
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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 40

THE CURRICULUM
OF THE
COLLEGE OF AGRICULTURE

CARL R. WOODWARD
Rutgers College, State University of New Jersey

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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LETTER OF TRANSMITTAL.

Department of the Interior,
Bureau of Education,
Washington, December 24, 1920.

Sir: The oldest of the colleges of agriculture in the United States is little more than 50 years old. Most of them have been established since 1870. Until the agricultural experiment stations had been in operation more than a decade—that is, until well within the present century—the courses of study in these colleges were meager and indefinite. Within the last 15 years their growth has been phenomenal in extent, variety, and definiteness. There is, I believe, nothing else in the college world to equal it.

Since the general purposes of all the 67 colleges of agriculture are the same, each of them can be helped by a knowledge of what the others are doing, and such a comparative account of them as is contained in this study by Mr. Carl R. Woodward, of Rutgers College, New Jersey, becomes both interesting and valuable. I am, therefore, submitting this manuscript for publication as a bulletin of the Bureau of Education.

Respectfully submitted.

The Secretary of the Interior.

P. P. Claxton, *Commissioner.*

THE CURRICULUM OF THE COLLEGE OF AGRICULTURE.

I. INTRODUCTION.[1]

PURPOSE OF THE STUDY.

The last two decades have seen a rapid expansion of the State colleges of agriculture in the United States. The enrollment has increased rapidly, and this has meant a rapid development in the means for offering resident instruction. The courses of study have been passing through a process of evolution coincident with this growth. In general, it is largely true that the present-day curriculum of the agricultural college is an outgrowth of the old academic college course, resulting from a grafting of agricultural instruction on the old stock. Whether any one of our colleges of agriculture was founded as such, or was created as a new department in an institution already existing, it must be admitted that almost without exception the present-day curriculum has not been worked out in a definite, clear-cut way on the basis of certain fundamental principles that underlie education in agriculture.

Certain marked tendencies have been evident. Old academic subjects one by one have been dropped by the wayside. More agricultural subjects have been included. Greater freedom of election has been allowed. New and highly specialized technical courses have been added. Greater opportunity for specialization has been provided. More emphasis has been placed on laboratory work. Farm practice has been made a requirement in many institutions. Two-year courses, winter short courses, summer courses, extension courses, and graduate courses have come to occupy important places in the college.

All this is evidence of development. And where there is rapid development, there is sometimes danger of getting away from what is best. Quality is often sacrificed for expediency. A study of the catalogs of the colleges of agriculture will reveal a constant modification of the courses offered. Evidently, we have been aiming to establish the ideal course in agriculture, but have not been certain just what it is. In other words, the curriculum of the agricultural college has not passed entirely through the experimental stage.

---

[1] The writer wishes to acknowledge the constructive criticism and suggestions received during the course of the study from the following: Dr. J. G. Lipman, Dr. C. H. Elliott, Prof. A. K. Getman, Prof. H. O. Sampson, Prof. F. G. Helyar, and Dr. T. J. Headlese, of the Rutgers College faculty, and Dr. C. D. Jarvis, of the U. S. Bureau of Education. This paper was completed June 1, 1919.

This paper presents a study of the four-year course in agriculture leading to the degree of bachelor of science in the land-grant colleges of the 48 States of the United States. The study was undertaken in the effort to determine some of the fundamental principles on which the four-year course should be based. In the course of the work a number of other facts developed that should be of value in the administration of an agricultural college curriculum. It was hoped that an intensive study would throw some light on the following questions:

1. What subjects should be required of all students in the four-year course in agriculture?
2. What place should each of these occupy in the course?
3. What should be the proportion of time devoted to the different types of work in the course?
4. How much freedom of choice of subjects should be allowed?
5. What is the best method of providing for specialization?
6. What relation should farm practice have to the requirements for graduation?
7. What are the weakest features at present in the average four-year course?
8. How may the efficiency of a course be measured?
9. How and to what extent may these principles be applied in the reorganization of a curriculum in agriculture?

No attempt was made to study any courses other than the regular four-year course leading to the bachelor's degree.

PREVIOUS STUDIES.

The fact that few studies have been recorded in which the four-year course has been considered from this standpoint was an additional incentive for the writer to take up the problem. When the work was begun, in December, 1917, preliminary papers had been published by F. B. Jenks[2] and C. D. Jarvis[3] in the Proceedings of the Association of American Agricultural Colleges and Experiment Stations. The committee on instruction in agriculture of this association, in their several reports, had made some valuable contributions to the subject. While this study was in progress, by far the most complete treatise yet in print was published by Dr. Jarvis[4] as a bulletin of the United States Bureau of Education. Some of the data reported in the present paper are covered in part in that bulletin. However, Dr. Jarvis has taken up some phases of the study, such as organization and entrance requirements, which are not considered here, and the present paper covers a number of topics not discussed by Dr. Jarvis. Furthermore, where the same subjects are covered in both, they are studied from a different point of view in most instances; so there is little actual duplication. The writer has found Dr. Jarvis's work of great value in completing the study, and will refer to it occasionally in the course of this paper.

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[2] Jenks, F. B., 1912, Agricultural Courses in the Land-Grant Colleges. *In* Proc. 26th An. Conv. Assn. Amer. Agr. Coll. Exp. Sta., pp. 108–112.

[3] Jarvis, C. D., 1917, A Study of the Requirements for Graduation in Agriculture. *In* Proc. 31st An. Conv. Assn. Amer. Agr. Coll. Exp. Sta., pp. 190–206.

[4] Jarvis, C. D., 1918, American Agricultural Colleges, U. S. Bu. Ed., Bul. 29, 1918.

II. PROCEDURE.

The data were compiled chiefly from two sources, the catalogs of the colleges and a questionnaire sent to the deans of the respective colleges. The catalogs used contained the announcements for the college year 1917–18.[5] The courses outlined would therefore represent approximately what the colleges were offering before reorganization was effected during the present year (1918–19) to provide for the Students' Army Training Corps. The questionnaire was sent out the first part of April, 1919, and hence the replies represent the very recent opinion of the men in the agricultural colleges who have been closely concerned with curriculum problems, in most instances for a number of years, and who have had the additional advantage of observing the college at work during the war period. Furthermore, they should reflect whatever effect the war-time demands have had on American agriculture, as well as need for reorganization in this reconstruction period. The summary of the questionnaire should represent a step in advance when compared with the summary of the catalog data.

The data compiled from the catalogs will be considered first, and the results compared with the summary of the questionnaires in the last part of the paper.

It should be noted here that the summarized data for the colleges were not submitted to the respective deans for their indorsement. While in many respects this would have been desirable, it was thought that in view of the difficulty of defining the method of classification in such a way that it would be accurately followed by all in checking over our figures, it might not be advisable. In calculating the distribution of time among the different types of work, for example, different individuals might place the same subject in different classes, and this would give rise to inaccuracies, and lessen the value of the data for comparative purposes. On the other hand, in the preparation of the data as here presented, a careful effort was made to follow the same standards of comparison throughout. The writer fully appreciates, however, that the absence of confirmation of the data by representatives of the colleges themselves might permit some errors to go undiscovered.

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[5] There was one exception to this. When the study was begun the announcements of Clemson College, South Carolina, for 1917-18 were not available; so those for 1916-17 were used. Because of delay in publishing this study, certain of the data will be somewhat out of date by the time it appears in print. The reader should give this due consideration in interpreting the material presented.

Reducing the data from the catalogs to a form suitable for comparative study involved a vast amount of tabulation. The methods followed will be described in connection with the discussion of the different topics.

III. REQUIRED WORK.

A study was first made of the subjects which are required of all students in each college, enrolled in the four-year course in agriculture, regardless of the special lines of work they may take up in the third or fourth years. First of all, what subjects are required? Second, in what year are they given? Third, how much time is devoted to each? From the answers to these questions we should be able to determine something indicating the relative importance of different subjects, as well as the sequence in which they should be offered.

To put these data in usable form, a large table was prepared showing the name of each subject required of all students in each college, the year in which it was given, the number of terms or semesters, and the number of credit hours per week. The data were recorded for 47 colleges. Utah Agricultural College was not included because it has a group elective system for all four years, making it impossible to record definitely any required subjects.

It is unnecessary to reproduce this table here, as it is very unwieldly, but the method of tabulation is illustrated by a small portion of the table, shown below. The arabic figures in each subject column represent the number of credit hours per week in the term or semester indicated in the second column. The small numeral to the right of and above each of these figures represents the year in which the subject is required.

The method of tabulating the data taken from the college catalogs is as follows:

Credit hours per week in the term or semester.

College.	Term or semester.	English.	Public speaking.	Inorganic chemistry.	Qualitative chemistry.	Quantitative chemistry.	Organic chemistry.	Agricultural chemistry.	Field crops.	Fruit growing.	Dairy husbandry.	Farm management, etc.; covering a total of 74 subjects.
Alabama..	First	5^1 $*5^3$	3^1	4^1	......	$*3^3$	5^2	......	....	......	3^3	....
	Second	$5^1 3^2 3^3$	......	4^1	......	$*3^3$	5^2	......	....	2^3	2^2	....
	Third	$5^1 3^2 *3^3$	......	4^1	......	$*3^3$	....	6^2	3^3	4^2	....	....
Arkansas..	First	$3^1 3^3$	......	4^1	2^2	....	3^2	......	....	......	....	....
	Second	$3^1 3^3$	......	4^1	......	2^2	....	3^2	4^1	......	3^2	....

* Optional.

In all, 76 subjects were included in the tabulation. On account of different terminology used in different colleges, a certain standardization was found necessary as the work proceeded, and in some instances it was necessary to group a number of closely related subjects under a single head. The subjects as given in the catalogs are here shown, with the grouping of the special subjects and those of different terminology:

1. English (literature, composition; rhetoric).
2. Public speaking (argumentation; public discourse).
3. Agricultural journalism (journalism).
4. Modern language (French, Spanish; German, Italian).
5. Psychology.
6. Agricultural education.
7. History.
8. General economics (political economy).
9. Rural economics (rural economy; rural institutions).
10. Political science (law, civics, American Government).
11. Sociology (social science).
12. Industrial geography.
13. Physical training (physical education, gymnastics; gymnasium).
14. Hygiene.
15. Military science (drill, tactics, theory).
16. Algebra.
17. Geometry (solid, analytical).
18. Trigonometry.
19. Agricultural mathematics.
20. Physics (agricultural).
21. Geology (physiography).
22. Climatology.
23. Chemistry, inorganic (general chemistry).
24. Chemistry, qualitative.
25. Chemistry, quantitative.
26. Chemistry, organic.
27. Chemistry, agricultural (soil chemistry; agricultural analysis).
28. Biochemistry.
29. Biology.
30. Breeding (genetics, plant and animal breeding; principles of breeding).
31. Physiology (anatomy and physiology).
32. Zoology (vertebrate zoology, general zoology; invertebrate zoology).
33. Bacteriology.
34. Microbiology (agricultural microbiology).
35. Entomology (economic entomology; insecticides).
36. Botany, general (plant anatomy; plant histology).
37. Botany, agricultural.
38. Plant physiology.
39. Plant pathology.
40. Soils (soil technology: soil management).
41. Soil physics.
42. Fertilizers and manures.
43. Field crops (agronomy; cotton, seeds).
44. Grain crops (corn).
45. Forage crops (grasses, forage crops, and weeds).

46. Fruit growing (horticulture; viticulture).
47. Pomology.
48. Olericulture (vegetable gardening; market gardening).
49. Plant propagation.
50. Forestry.
51. Landscape horticulture (landscape art; landscape gardening).
52. Animal industry (types of live stock; types and breeds, live stock; live-stock judging, live-stock management).
53. Feeding and nutrition (feeds and feeding; nutrition).
54. Veterinary science (animal diseases; veterinary medicine).
55. Dairy husbandry (dairy industry, milk; dairying, dairy production, dairy management).
56. Poultry husbandry.
57. Farm management (farm management and organization).
58. Farm accounts.
59. Farm study.
60. Surveying (civil engineering).
61. Rural engineering (sewage disposal, water supplies; rural sanitation).
62. Irrigation and drainage.
63. Drawing (freehand drawing, drafting; mechanical drawing).
64. Shopwork (woodwork, mechanic arts; forge).
65. Farm mechanics (farm machinery, farm motors; field machinery).
66. Farm buildings (rural architecture).
67. Library work.
68. Extension.
69. Natural history of farm.
70. Freshmen lectures.
71. Farm practices.
72. General agronomy.
73. General agriculture.
74. Agricultural experimentation.
75. Seminar.
76. Thesis.

Subjects offered strictly as optionals also were recorded. An optional subject may be defined in this connection as one which may be selected from a small group, usually of two, three, and seldom over four, subjects. Special subjects offered as a part of a departmental course in the junior or senior years are not considered as optionals, or where subjects are offered as majors or minors in which there is considerable freedom of choice. In cases where specialization begins in the second year, subjects in certain groups not required for all students are classed as optionals.

In making the first tabulation, the optionals were recorded along with the required subjects, and were designated with an asterisk (*). When the table was completed, they were transferred to a separate table, showing optional work alone.

The purpose of including optional subjects in the study was to determine what place these have in the curriculum. Certainly optional work should not be classed with free electives. There is a degree of requirement about optionals that associates them closely with required subjects, and the relative standing of the different subjects with respect to importance can be concluded more accurately by considering the extent to which they are offered as optionals along with the degree to which they are required. From the data recorded, Tables 1 and 2 were prepared. Table 1 shows the number of colleges requiring each subject in any given year, for either one or two semesters, for any given number of hours per week. Table 2 shows the same for optional work. The total number of colleges requiring the work in each of the four years also is shown. The summary column shows the total number of colleges requiring work in each subject any time during the course for any given number of hours per week.

TABLE 1.—*Distribution of required subjects, showing number of colleges requiring each*

Required subjects.	First year.											Second year.										
	Hours per week.										Total.	Hours per week.										Total.
	One.		Two.		Three.		Four.		Five.			One.		Two.		Three.		Four.		Five.		
	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.		1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	
English	...	...	...	3	1	33	...	2	1	6	46	1	...	1	11	2	8	1	...	...	...	24
Public speaking	...	2	1	...	1	...	...	...	...	...	4	...	1	3	...	3	1	...	...	...	...	8
Agricultural journalism	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Library work	5	...	...	...	...	...	...	...	...	...	[1] 5	1	...	...	...	...	...	...	...	...	...	1
Modern language	...	...	...	...	...	8	...	3	...	...	11	...	...	...	...	...	5	...	1	...	...	6
Psychology	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
History	...	...	1	1	3	...	...	...	...	...	5	2	...	1	...	1	...	...	...	...	...	4
Economics	...	...	...	...	1	1	...	...	...	...	2	...	...	...	...	1	2	...	...	...	...	3
Rural economics	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Law (political science)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2
Sociology	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Industrial geography	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	1
Physical training	1	15	...	...	...	...	...	...	...	...	[2] 16	2	7	...	...	...	...	...	...	...	...	9
Hygiene	3	1	1	...	...	...	...	...	...	...	[2] 5	...	...	...	...	...	...	...	...	...	...	...
Military science	...	23	...	16	...	...	...	1	...	1	[4] 41	...	21	...	16	...	...	...	1	...	1	44
Algebra	...	...	3	...	7	4	3	1	...	...	18	1	...	1	...	...	...	...	...	...	...	2
Geometry (solid, analytical).	...	...	1	...	...	1	2	...	...	...	4	1	...	...	...	...	...	...	...	...	...	1
Trigonometry	...	1	6	1	10	1	2	...	...	...	21	2	...	1	...	...	1	1	...	...	...	5
Agricultural mathematics	...	...	...	...	2	1	...	...	1	...	4	...	...	...	...	...	...	...	...	...	...	...
Physics	...	...	...	...	4	4	...	1	3	...	12	...	...	...	1	2	8	3	3	2	1	20
Geology	1	...	1	...	2	...	...	...	...	...	4	...	...	2	...	8	...	...	...	...	...	10
Chemistry:																						
Inorganic	...	...	...	1	3	13	2	15	4	2	40	...	...	...	...	...	1	...	4	...	3	8
Qualitative	...	...	3	2	3	...	3	...	1	...	12	...	...	5	...	4	2	1	...	...	...	12
Quantitative	...	...	...	...	...	...	...	...	...	...	...	...	...	6	1	3	...	...	...	1	...	11
Organic	...	...	...	...	1	...	...	...	...	...	1	...	...	3	...	7	3	7	...	2	...	22
Agricultural	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	1	1	3	1	8	...	14
Biochemistry	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	2
Biology	...	...	...	...	1	1	...	...	...	...	2	...	...	1	...	...	...	1	...	...	...	2
Breeding	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	1	...	...	...	4
Physiology	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	1	...	4
Zoology	...	...	1	1	...	6	3	...	1	...	12	...	...	1	1	4	9	5	1	1	...	22
Bacteriology	...	...	...	...	...	...	1	...	1	...	2	...	...	...	1	6	...	2	...	1	...	10
Entomology	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1	4	...	4	...	...	...	9
Botany (general)	...	1	2	1	4	11	4	6	3	2	34	...	...	2	...	1	1	1	3	3	...	11
Botany (agricultural)	...	...	1	...	1	1	...	1	...	...	4	...	...	...	1	1	...	...	...	...	...	2
Plant psysiology	...	...	...	...	1	...	...	...	...	...	1	...	...	1	2	1	...	1	...	...	...	5
Plant pathology	...	...	1	...	...	...	...	...	...	...	1	...	...	1	...	2	...	...	...	...	...	3
General agriculture	3	...	1	1	1	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...
Soils	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2	8	3	4	1	2	...	20
Soil physics	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	5	...	...	...	8
Fertilizers and manures	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2
Field crops	1	...	3	1	7	...	5	...	1	...	18	...	...	1	...	5	1	2	...	1	...	10
Grain crops	...	...	1	1	...	1	...	...	...	...	3	...	...	1	1	2	...	1	...	...	...	5
Forage crops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	2	...	...	...	5
Fruit growing	1	...	2	2	4	...	...	...	...	...	9	...	1	5	...	6	1	1	...	...	...	14
Pomology	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	4	...	...	...	...	...	6
Olericulture	...	...	2	...	2	...	...	...	...	...	4	...	...	2	1	5	...	...	...	...	...	8
Plant propagation	...	...	1	1	2	...	...	...	...	...	4	...	...	1	...	5	...	1	...	...	...	7
Forestry	...	...	1	...	1	...	...	...	...	...	2	...	...	1	...	1	...	...	...	...	...	2
Landscape horticulture	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	3
Animal industry	1	...	5	5	10	4	6	1	1	1	34	1	...	4	3	6	1	3	...	...	...	18
Nutrition	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	1	...	...	...	4
Veterinary science	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	1	...	...	...	1	5
Dairy husbandry	2	...	4	1	5	...	...	...	...	...	12	...	...	5	...	15	...	...	...	...	...	20
Poultry husbandry	1	...	2	...	1	...	...	...	...	...	4	1	...	3	2	3	...	...	...	...	...	9
Farm management	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	3
Farm accounts	1	...	...	...	...	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	2
Surveying	2	...	1	...	...	1	...	...	1	...	5	1	...	3	1	3	...	1	...	...	...	9
Rural engineering	1	...	1	...	...	...	...	...	...	...	2	...	...	...	...	1	...	...	...	...	...	1
Irrigation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drawing	4	4	6	2	...	...	...	...	...	...	16	...	...	...	...	...	...	...	...	...	...	...
Shopwork	2	5	1	4	...	...	...	...	...	...	12	1	...	...	...	...	...	...	...	...	...	1
Farm mechanics	1	...	2	1	1	1	1	...	...	...	7	...	...	3	1	4	...	...	...	...	...	8
Farm buildings	...	...	1	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Thesis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

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[1] Required in one additional college, but not counted toward academic credit.

[2] Required in two additional colleges, but not counted toward academic credit.

subject, each year, with the number of semesters and the number of semester-hours per week.

Third year.											Fourth year.											Total course.									
Hours per week.											Hours per week.											Hours per week.									
One.		Two.		Three.		Four.		Five.			One.		Two.		Three.		Four.		Five.			One.		Two.		Three.		Four.		Five.	
1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.
..	1	...	3	2	4	1	...	...	...	11	..	..	...	1	1	...	...	...	...	...	2	1	1	1	18	6	45	2	2	1	6
1	2	1	...	1	...	...	...	...	...	5	1	1	...	1	...	...	...	...	...	...	3	2	6	5	1	5	1	...	...	...	...
1	..	...	...	...	...	...	...	...	...	*1*	..	..	...	...	...	...	...	...	...	...	...	2	..	...	...	...	...	...	...	...	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	6	..	...	...	...	...	...	...	...	...
..	..	...	...	...	1	...	...	...	...	*1*	..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	14	...	4	...	...
..	..	...	...	1	...	...	...	...	...	1	..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	1	...	...	...	...	...
..	..	...	...	2	3	...	...	...	...	*5*	..	..	...	...	...	...	...	...	...	...	...	2	..	2	1	6	3	...	...	...	...
..	..	1	...	2	2	...	...	1	...	6	..	..	...	3	7	1	...	1	...	...	*12*	..	..	1	3	11	6	...	1	1	...
..	..	...	...	4	...	...	...	1	...	5	..	..	2	...	5	...	...	...	...	...	*7*	..	..	2	...	10	...	...	...	1	...
..	..	...	...	...	2	...	...	...	...	2	..	..	...	...	2	1	...	...	...	...	*3*	..	..	...	1	3	3	...	...	...	...
..	..	...	...	2	...	...	...	1	...	*3*	..	..	1	...	...	...	...	...	...	...	1	..	..	1	...	3	...	...	...	1	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	..	..	1	...	1	...	...	...	...	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	3	22	...	...	...	...	...	...	...	...
..	..	...	...	...	...	1	...	...	...	1	..	..	...	...	...	...	...	...	...	...	...	3	1	1	...	...	...	1	...	...	...
..	1	...	4	...	1	...	...	...	...	[2]6	..	3	...	2	...	...	...	...	...	...	[2]5	..	48	...	38	...	1	...	2	...	1
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	1	..	4	...	7	4	3	1	...	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	1	..	1	...	...	1	2	...	...	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	2	1	7	1	10	2	3	...	...	...
1	..	...	...	...	...	...	...	...	...	1	..	..	...	...	...	...	...	...	...	...	...	1	..	...	...	2	1	...	...	1	...
..	..	...	...	...	1	...	2	...	...	3	..	..	...	...	...	...	...	...	...	...	...	..	..	...	1	6	13	3	6	5	1
..	..	...	...	3	...	...	...	...	...	3	..	..	...	1	...	...	1	...	...	...	2	1	..	3	...	13	...	...	...	...	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	..	..	...	1	3	14	2	19	4	5
..	..	...	...	1	...	...	...	...	...	1	..	..	...	...	...	...	...	...	...	...	...	..	..	8	2	8	2	4	...	1	...
..	1	1	...	3	...	1	...	...	...	6	..	..	...	...	...	...	...	...	...	...	...	..	1	7	1	6	...	1	...	1	...
..	..	...	...	4	1	...	...	...	...	5	..	..	...	...	...	...	...	...	1	...	1	..	..	3	...	12	4	7	...	3	...
..	..	2	...	2	...	...	...	...	...	4	..	..	...	...	...	1	1	...	...	...	2	..	..	2	...	4	2	4	1	8	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	1	...	...	1	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	..	..	1	...	1	1	1	...	...	...
..	..	2	1	1	...	...	...	...	...	*4*	..	..	...	1	3	...	...	...	...	...	*4*	..	..	3	2	6	...	1	...	...	...
..	..	...	...	...	...	...	...	1	...	1	..	..	...	...	...	...	...	...	...	...	...	..	..	...	1	2	...	1	...	2	...
..	..	...	1	...	1	...	1	...	...	3	..	..	...	...	...	...	...	...	...	...	...	..	..	2	3	4	16	8	2	2	...
..	..	1	...	7	2	2	...	1	...	*13*	..	..	...	...	2	2	...	...	...	...	4	..	..	1	1	15	4	5	...	3	...
1	..	...	1	3	1	1	...	...	...	7	..	..	1	...	1	...	...	...	...	...	2	1	..	1	2	9	1	5	...	...	...
..	..	1	1	...	...	...	...	...	...	2	..	..	...	...	...	...	...	...	...	...	...	..	1	5	2	5	12	5	9	6	2
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	..	..	1	1	2	1	...	1	...	...
..	..	...	...	...	1	...	...	...	...	1	..	..	1	...	...	...	...	...	...	...	1	..	..	2	2	2	1	1	...	...	...
..	..	1	1	...	...	...	...	...	...	2	..	..	...	...	1	...	...	...	...	...	1	..	..	3	1	3	...	...	...	...	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	1	...	...	...	...	...	1	3	..	1	1	2	...	...	...	...	...
..	..	...	1	4	2	1	1	4	...	13	..	..	1	...	...	...	...	...	...	...	1	..	..	1	3	12	5	6	2	6	...
..	..	...	...	3	...	2	...	...	...	5	..	..	...	...	...	...	...	...	...	...	...	..	..	1	...	4	1	7	...	...	...
..	..	1	...	...	...	...	...	...	...	1	..	..	1	...	1	...	...	...	...	...	*2*	..	..	3	...	2	...	...	...	...	...
..	..	2	...	2	2	1	...	1	...	8	..	..	...	...	...	...	...	...	...	...	...	1	..	6	1	14	3	8	...	3	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	..	..	2	2	2	1	1	...	...	...
..	..	1	...	1	...	1	...	...	...	3	..	..	...	...	...	...	...	...	...	...	...	..	..	1	...	4	...	3	...	...	...
..	..	3	...	1	...	...	...	...	...	4	..	..	...	...	...	...	...	...	...	...	...	1	1	10	2	11	1	1	...	...	...
..	..	...	...	2	...	1	...	...	...	3	..	..	...	...	...	...	...	...	...	...	...	..	..	1	1	6	...	1	...	...	...
..	..	1	1	...	...	...	...	...	...	2	..	..	...	...	...	...	...	...	...	...	...	..	..	5	2	7	...	...	...	...	...
..	..	...	...	1	...	...	...	...	...	1	..	..	...	...	...	...	...	...	...	...	...	..	..	2	1	8	...	1	...	...	...
1	..	...	...	...	...	...	...	...	...	1	..	..	...	...	...	...	...	...	...	...	...	1	..	2	...	2	...	...	...	...	...
..	..	1	...	1	...	...	...	...	...	2	..	..	...	...	...	...	...	...	...	...	...	..	1	3	...	1	...	...	...	...	...
1	..	1	1	1	...	...	...	...	...	4	..	..	...	...	...	...	...	...	...	...	...	3	..	10	9	17	5	9	1	1	1
..	..	1	...	7	...	...	...	...	...	*8*	..	..	...	...	1	...	...	...	...	...	1	..	..	2	...	10	...	1	...	...	...
..	..	...	...	2	2	...	1	...	...	5	..	..	1	...	2	2	1	...	...	...	*6*	..	..	2	...	6	5	1	1	...	1
..	..	1	1	...	...	2	...	...	...	4	..	..	...	...	1	...	...	...	...	...	1	2	..	10	2	21	...	2	...	...	...
..	..	...	...	1	...	...	...	...	...	1	..	..	...	...	...	...	...	...	...	...	...	2	..	5	2	5	...	...	...	...	...
..	..	1	1	2	...	...	...	...	...	4	..	..	2	...	5	2	...	...	2	...	*11*	..	..	4	1	9	2	...	...	2	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	1	..	2	...	...	...	...	...	...	...
..	..	1	...	1	...	1	...	...	...	3	..	..	...	...	...	...	...	...	...	...	...	3	..	5	1	4	1	2	...	1	...
..	..	1	...	1	...	...	...	...	...	*2*	..	..	...	...	2	...	...	...	...	...	*2*	1	..	2	...	4	...	...	...	...	...
..	..	...	...	1	...	...	...	...	...	*1*	..	..	...	...	...	...	...	...	1	...	*1*	..	..	...	...	1	...	...	...	1	...
1	..	...	...	...	...	...	...	...	...	1	..	..	...	...	...	...	...	...	...	...	...	5	4	6	2	...	...	...	...	...	...
1	..	...	1	...	...	...	...	...	...	2	..	..	...	...	...	...	...	...	...	...	...	4	5	1	5	...	...	...	...	...	...
..	..	1	...	1	...	...	...	...	...	2	..	..	2	...	1	...	...	...	...	...	3	1	..	8	2	7	1	1	...	...	...
..	..	...	...	...	...	1	...	...	...	1	..	..	...	...	...	...	...	...	...	...	...	..	..	1	...	1	...	1	...	...	...
..	..	...	...	...	...	...	...	...	...	...	..	..	...	2	...	...	...	...	...	1	[3]3	..	..	...	2	...	...	...	...	...	1

---

[3] Required in three additional colleges, but not counted toward academic credit.

[4] Required in five additional colleges, but not counted toward academic credit.

Additional subjects not tabulated in preceding table but required in one college.

Subjects.	Hours per week.	Number of semesters.	Year.
Extension	1	1	First.
Natural history of farm	1	1	Do.
Seminar	1	1	Do.
Agricultural experimentation	3	1	Fourth.
General agronomy	2	2	First.
Climatology	1	1	Second.
Farm practices	1	2	First.
Farm study	1	2	Do.
Greenhouse management	3	1	Fourth.
Agricultural education	1	1	Do.
Microbiology	3	1	Third.
Freshmen lectures	....	....	First.

TABLE 2.—*Distribution of optional subjects, showing number of colleges offering each subject as an optional each year, with the number of semesters and the number of semester hours per week.*

Subjects.	First year.											Second year.											Third year.											Fourth year.										
	Hours per week.											Hours per week.											Hours per week.											Hours per week.										
	One.		Two.		Three.		Four.		Five.			One.		Two.		Three.		Four.		Five.			One.		Two.		Three.		Four.		Five.			One.		Two.		Three.		Four.		Five.		
	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.
English														1								1					1	2					3											
Public speaking													1									1																						
Agricultural journalism																																												
Library work																																												
Modern language																	1					1				1		1					2											
Psychology																	2					2																						
History						1					1					1						1					1						1											
Economics																1						1				1							1						1					1
Rural economics																2						2																						
Law (political science)																																												
Sociology																1						1																	1					1
Industrial geography																																												
Physical training		1									1		1									1		1									1		1									1
Hygiene																																												
Military science		1									1		1						1			2								1			1								1			1
Algebra																																												
Geometry (solid, analytical)						1					1																																	
Trigonometry																																												
Agricultural mathematics																																												
Physics																1			1			2																						
Geology																3	1					4																						
Chemistry:																																												
Inorganic																																												
Qualitative															1		1			1		3																						
Quantitative																1			1			2						1					1											
Organic																1	1		1			3																						
Agricultural																1				1		2																						
Biochemistry																	1					1																						

TABLE 2.—*Distribution of optional subjects, showing number of colleges offering each subject as an optional each year, with the number of semesters and the number of semester hours per week*—Continued.

Subjects.	First year.											Second year.											Third year.											Fourth year.										
	Hours per week.											Hours per week.											Hours per week.											Hours per week.										
	One.		Two.		Three.		Four.		Five.			One.		Two.		Three.		Four.		Five.			One.		Two.		Three.		Four.		Five.			One.		Two.		Three.		Four.		Five.		
	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	1 sem.	2 sem.	Total.
Biology	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Breeding	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	1
Physiology	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Zoology	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...	1	3	...	1	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bacteriology	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Entomology	...	...	...	...	...	1	...	...	...	...	1	...	...	...	1	...	1	1	...	...	...	3	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Botany (general)	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	1	1	...	...	...	...	3	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	1
Botany (agricultural)	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plant physiology	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	2	...	1	...	...	...	3	...	...	...	...	...	...	1	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...
Plant pathology	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
General agriculture	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Soils	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Soil physics	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fertilizers and manures	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...
Field crops	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Grain crops	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Forage crops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fruit growing	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	3	...	...	...	...	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Pomology	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Olericulture	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plant propagation	...	...	...	...	1	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Forestry	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Landscape horticulture	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Animal industry	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	2	...	1	...	...	6	...	...	...	...	2	2	...	...	...	...	4	...	...	1	...	1	...	...	...	...	...	2
Nutrition	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Veterinary science	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	1	...	...	...	4	...	...	...	...	...	1	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...
Dairy husbandry	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	1	...	...	4	...	...	...	...	2	...	1	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
Poultry husbandry	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...

Farm management																									1								1		1									1
Farm accounts														1								1																						
Surveying														1	1	1						3																						
Rural engineering																		1				1																						
Irrigation														2								2																						
Drawing																1	1					2																						
Shopwork				1							1																																	
Farm mechanics				1							1			1	1	1						3					1						1											
Farm buildings														1								1																						
Thesis																																												

In preparing these tables from the first tabulation, it was necessary to convert all data to a two-semester-per-year basis. Nine of the 47 colleges divide the college year into 3 terms; one has 1 term and the balance have 2 semesters of a half year each. As it was necessary to have a common basis for comparison, the work in the 3-term colleges as originally recorded was transposed to its equivalent in round numbers in half-year semesters. Some approximation was necessary here, as it was thought desirable to use only whole numbers. So the number of hours per week was recorded at the nearest unit. Thus a term-hour is equivalent to two-thirds of a semester hour. If, for example, a college offered chemistry for 6 hours a week for one term, it would be entered as 4 hours a week for one semester.

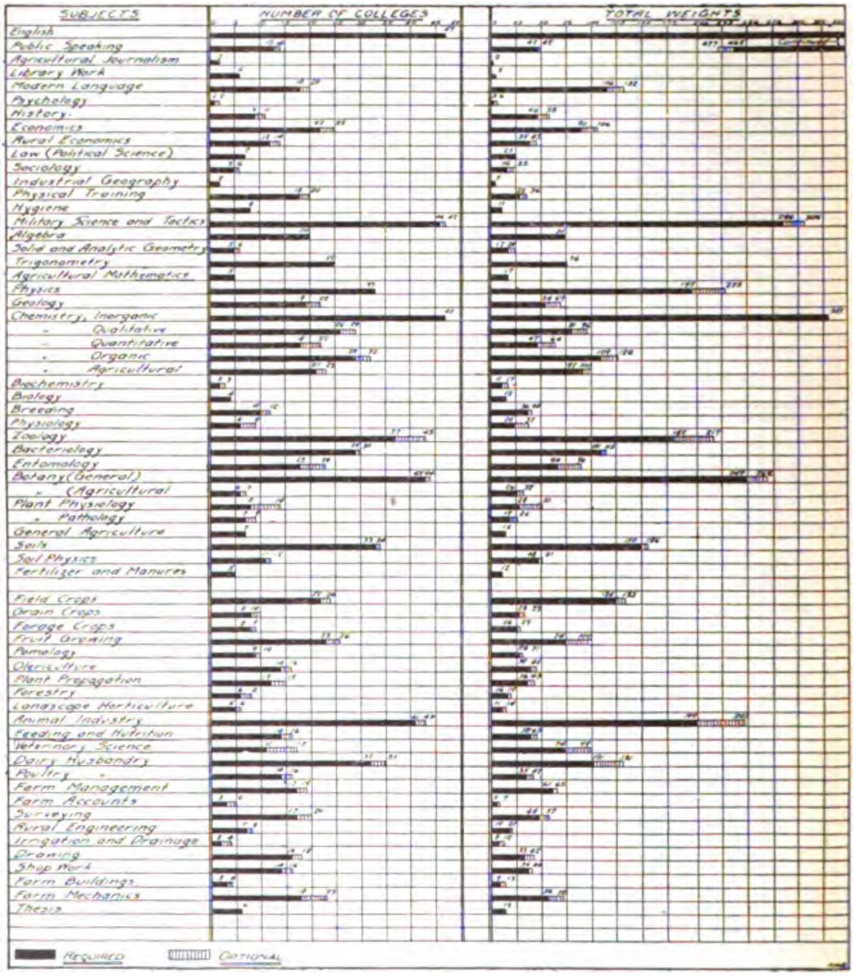

DIAGRAM 1.—*Number of colleges in which the respective subjects are required and the number in which they are offered as optionals.*

The number of colleges requiring each subject at any time during the course was calculated and is shown in diagram 1 (left-hand column).

The number of colleges requiring a subject is indicative of its relative importance, and this can be judged from the diagram. It was felt, however, that a more accurate measure of relative standing is desirable. The number of semesters a subject is given and the number of hours a week are factors which should be considered in determining the relative importance. Accordingly, a unit of measure was devised for this purpose, which for convenience may be designated as a "weight." A single unit, or "weight," for any given subject represents one college requiring it for one hour a week for one semester. The total number of weights, then, for any required subject represents the total number of credit-hours per week it is required for the total number of semesters in all of the colleges taken together. This was calculated from Table 1. To determine the number of weights for each subject, the number of colleges requiring it for a given number of credit-hours per week for one semester in any one year was multiplied by the number of hours a week. When given for two semesters, the product was multiplied by 2. The sum of the one-semester and the two-semester weights would give the number of weights for the year. This was done for each year and the total number of weights calculated by finding the sum of the weights for all four years.

The formula for calculating the weights may be represented thus:

$$\begin{array}{c}\text{Total of}\\ \text{weights for}\\ \text{any one}\\ \text{subject}\\ \text{equals—}\end{array}\left\{\begin{array}{l}
\begin{array}{c}\text{First year}\\ \textit{plus}\end{array}\left\{\begin{array}{l}
\text{1 }\textit{time}\left\{\begin{array}{l}\text{number of colleges requiring subject 1 hour per week 1 semester,}\\ \qquad\qquad\textit{plus}\\ \text{2 }\textit{times}\text{ number of colleges requiring subject 1 hour per week 2 semesters,}\end{array}\right.\\
\textit{plus}\\
\text{2 }\textit{times}\left\{\begin{array}{l}\text{number of colleges requiring subject 2 hours per week 1 semester,}\\ \qquad\qquad\textit{plus}\\ \text{2 }\textit{times}\text{ number of colleges requiring subject 2 hours per week 2 semesters,}\end{array}\right.\\
\textit{plus}\\
\text{3 }\textit{times}\left\{\begin{array}{l}\text{number of colleges requiring subject 3 hours per week 1 semester,}\\ \qquad\qquad\textit{plus}\\ \text{2 }\textit{times}\text{ number of colleges requiring subject 3 hours per week 2 semesters,}\end{array}\right.\\
\textit{plus}\\
\text{4 }\textit{times}\left\{\begin{array}{l}\text{number of colleges requiring subject 4 hours per week 1 semester,}\\ \qquad\qquad\textit{plus}\\ \text{2 }\textit{times}\text{ number of colleges requiring subject 4 hours per week 2 semesters,}\end{array}\right.\\
\textit{plus}\\
\text{5 }\textit{times}\left\{\begin{array}{l}\text{number of colleges requiring subject 5 hours per week 1 semester,}\\ \qquad\qquad\textit{plus}\\ \text{2 }\textit{times}\text{ number of colleges requiring subject 5 hours per week 2 semesters.}\end{array}\right.
\end{array}\right.\\
\text{Second year—Same formula as for first year.}\\
\quad\textit{plus}\\
\text{Third year—Same formula as for first year.}\\
\quad\textit{plus}\\
\text{Fourth year—Same formula as for first year.}
\end{array}\right.$$

The weights of the subjects, both required and optional, are given in Table 3, and shown graphically in diagram 1 (right-hand column).

By studying diagram 1, one gets a good idea of the relative standing of the different required subjects. Only two subjects were required in all 47 colleges—English and inorganic chemistry. The same could be said of military training except that it was optional with physical training in one college. Since our entry in the war, this has probably been changed. From the standpoint of the number of colleges, botany ranks next with 43, animal industry with 41, zoology with 37, physics and soils each with 33, and dairy husbandry with 32. Other subjects required in 24 or more colleges (a majority of those studied) in order are organic chemistry, bacteriology, qualitative chemistry, and trigonometry.

It is thus seen that three types of work are well represented in the majority of colleges. In the academic field we have English and trigonometry (military drill, also, may be included here for convenience, but more correctly may be considered in a class by itself). The fundamental sciences are represented by inorganic chemistry, qualitative chemistry, organic chemistry, physics, botany, zoology, and bacteriology. The three agricultural subjects appearing most often are soils, animal industry, and dairy husbandry.

It should be recognized that this diagram has certain limitations with respect to the group of agricultural subjects. Much of the work in agriculture is reserved for the last two years, and in many cases the subjects are offered as electives, optionals, or in special departmental groups. Hence they do not show up very prominently here, and this diagram is consequently not an accurate index of their place in the curriculum. Still, we are studying these data from the standpoint of *required* work, and the diagram does strikingly bring out one fact—relatively less of the agricultural subjects are *required*, and the student is given considerable latitude of choice in making his selection of agricultural work.

It appears to the writer that there is a degree of weakness in the tendency here exhibited. If the student needs a good foundation in certain academic subjects, and should have a good basic knowledge of certain sciences, which are accordingly required, why does he not need at least an introductory knowledge of the important branches of agriculture as a basis for specialization along any one of these branches? As a general principle, effort should be made to require an elementary course in each of the important branches of agriculture to give the student a broad view of the whole field in order that he may choose wisely the branch of agriculture in which later he will specialize.

TABLE 3.—*Summary of "weights"* [1] *of required and optional subjects.*

	Weights required.					Weights optional.					Number of colleges in which required.	Number of colleges offering as optional.[2]	Total colleges required and optional.	Total weights required and optional.
	First year.	Second year.	Third year.	Fourth year.	Total, 4 years.	First year.	Second year.	Third year.	Fourth year.	Total, 4 years.				
English	306	101	48	7	462		6	9		15	47		47	477
Public speaking	9	23	8	7	47		2			2	13	1	14	49
Agricultural journalism		1	1		2						2		2	2
Library work	5	1			6						6		6	6
Modern language	72	38	6		116		6	10		16	18	2	20	132
Psychology			3		3		12			12	1	1	2	15
History	15	7	24		46	6	3	3		12	9	2	11	58
Economics	9	9	25	47	90		3	4	6	16	22	3	25	106
Rural economics		3	17	19	39		6			6	12	2	14	45
Law (political science)		7	6	12	25						7		7	25
Sociology		3	11	2	16		3		6	9	5	1	6	25
Industrial geography	2		3		5						2		2	5
Physical training	16	12			28	2	2	2	2	8	18	2	20	36
Hygiene	7		4		11						8		8	11
Military science	128	124	24	10	286	2	10	8		20	46	1	47	306
Algebra	71	3			74						20		20	74
Geometry (solid, analytical)	16	1			17	6				6	5	1	6	23
Trigonometry	62	14			76						25		25	76
Agricultural mathematics	16		1		17						5		5	17
Physics	59	114	22		195		11			11	33		33	206
Geology	9	28	9	8	54		15			15	19	3	22	69
Chemistry, inorganic	261	68			329						47		47	329
Chemistry, qualitative	40	38	3		81		15			15	26	3	29	96
Chemistry, quantitative		30	17		47		11	6		17	18	4	22	64
Chemistry, organic	3	83	18	5	109		17			17	29	3	32	126
Chemistry, agricultural	3	69	10	10	92		8			8	21	2	23	100
Chemistry, biochemistry		11			11		6			6	2	1	3	17
Biology	9	6			15						4		4	15
Breeding		12	11	13	36		2		2	4	10	2	12	40
Physiology	3	16	5		24		9	4		13	6	3	9	37
Zoology	59	105	18		182	4	31			35	37	6	43	217
Bacteriology	9	35	48	18	110		5			5	29	1	30	115
Entomology	3	34	24	5	66	6	14	4		24	18	5	23	90
Botany (general)	187	56	6		249	6	11	3	3	20	43	1	44	269
Botany (agricultural)	19	7			26	6				6	6	1	7	32
Plant physiology	3	17	6	2	28	4	10	9		23	8	6	14	51
Plant pathology	2	8	6	3	19		3	4		7	7	2	9	26

[1] See p. 21.

[2] Only those colleges are included in this column in which the respective subjects are *not required*.

TABLE 3.—*Summary of "weights" of required and optional subjects*—Continued.

	Weights required.					Weights optional.					Number of colleges in which required.	Number of colleges offering as optional.	Total colleges required and optional.	Total weights required and optional.
	First year.	Second year.	Third year.	Fourth year.	Total, 4 years.	First year.	Second year.	Third year.	Fourth year.	Total, 4 years.				
General agriculture	12			3	15						7		7	15
Soils	4	84	60	2	150			6		6	33	1	34	156
Soil physics		31	17		48		3			3	11	1	12	51
Fertilizers and manures		5	2	5	12						5		5	12
Field crops	57	36	31		124		6	3		9	22	2	24	133
Grain crops	12	16			28	3		2		5	8	2	10	33
Forage crops		17	9		26		3			3	8	1	9	29
Fruit growing	25	40	9		74		12	6		18	23	3	26	100
Pomology		18	10		28			3		3	9	1	10	31
Olericulture	10	23	6		39		6			6	14	2	16	45
Plant propagation	12	21	3		36	3	4			7	12	3	15	43
Forestry	5	5	1	3	14			5		5	6	2	8	19
Landscape horticulture		6	5		11			2		2	5	1	6	13
Animal industry	132	57	10		199		25	18	5	48	41	2	43	247
Nutrition		12	23	3	38		2		5	7	14	2	16	45
Veterinary science		24	26	24	74		14	11		25	11	6	17	99
Dairy husbandry	29	55	14	3	101		20	10		30	32	3	35	131
Poultry husbandry	8	24	3		35		4	3		7	14	2	16	42
Farm management		8	12	41	61			2	2	4	17	2	19	65
Farm accounts	1	4			5		2			2	3	2	5	7
Surveying	15	24	9		48			9		9	17	3	20	57
Rural engineering	3	3	5	6	17			4		4	7	1	8	21
Irrigation			3	5	8			4		4	2	2	4	12
Drawing	32		1		33			9		9	16	2	18	42
Shop work	30	1	5		36		4			4	14	2	16	40
Farm mechanics	22	22	5	7	56	4	9	3		16	18	5	23	72
Farm buildings	5		4		9		4			4	3	1	4	13
Thesis				18	18						6		6	18

It is interesting to compare the graphs representing the "weights" of each subject with the graphs of the number of colleges in which the subjects are required. First of all, the parallelism between the two sets of graphs is most noticeable. There are, however, certain striking differences. There is a greater variation between subjects in the "weight" column, emphasizing the difference in standing between the subjects listed. English stands out strikingly as the leading subject, heading the list with 462 units. Inorganic chemistry follows with 329 weights, and military training with 286. Botany follows with 249, animal industry 199, physics 195, zoology 182, and soils 150. Other subjects having over 100 weights (in order) are field crops 124, modern language 116, bacteriology 110, organic chemistry 109, and dairy husbandry 101.

It may be seen, then, that the "order of importance" of subjects is not quite the same in the two graphs. This is brought out below, where the subjects are listed according to rank:

Rank by number of colleges.	Rank by weights.
1. English.	1. English.
2. Inorganic chemistry.	2. Inorganic chemistry.
3. Military training.	3. Military training.
4. Botany.	4. Botany.
5. Animal industry.	5. Animal industry.
6. Zoology.	6. Physics.
7. Physics.	7. Zoology.
8. Soils.	8. Soils.
9. Dairy husbandry.	9. Field crops.
10. Organic chemistry.	10. Modern language.
11. Bacteriology.	11. Bacteriology.
12. Qualitative chemistry.	12. Organic chemistry.
13. Trigonometry.	13. Dairy husbandry.

The order of the first five subjects is the same in both groups; and also for the first eight, except that physics and zoology are reversed. The last five subjects in both groups include bacteriology, organic chemistry, and dairy husbandry, but qualitative chemistry and trigonometry in the first group give way to field crops and modern language in the second.

The subjects with a small number of units to their credit also are deserving of attention. Glancing down the list we see sociology, agricultural mathematics, forestry, landscape horticulture, farm buildings, and general agriculture, for instance. What is the reason for their insignificant standing? Have they been tried and found wanting and now are dying a natural death? Or are they comparatively new subjects which have been recently introduced at a few institutions and are worthy of adoption by others? The place of some of these, such as forestry, unquestionably should be determined largely by local conditions. On the other hand, a subject like agricultural mathematics is of general application and may be worthy of consideration in any college. While this diagram shows existing tendencies, it should not for this reason be interpreted as representing what is best in the four-year course. It is important to remember that, while adoption by a majority of colleges is strong evidence in favor of a subject, it does not conclusively prove its place in all curricula. This is simply an analysis of the situation as it is.

With respect to the optional work recorded in Table 2 and shown in the graph, little is to be said. Options are most abundant in the sophomore year. Some are offered in the freshman year, but in general most of the first year's work is required. Considerable optional work appears in the junior year, but this is reduced on account of the departmental group electives and the large amount of free election which begins in this year in many colleges. The optional work in the senior year is unimportant.

The relative standing of the subjects as found for required work is not greatly altered when the optional work is added.

IN WHAT YEAR SHALL A SUBJECT BE GIVEN?

Table 1 shows the distribution of required subjects, not only throughout the four years of the course, but also with respect to the number of hours a week and the number of semesters. The largest number of colleges requiring any given subject in any one of these places appears in heavy-face type. The largest number of colleges requiring a subject within any of the four years is given in italics. Also in the summary column for all four years at the right, the "most popular" number of hours a week, with the number of semesters, is indicated by the heavy-face type. These data are summarized in a more easily readable form in Tables 4 and 5.

Table 4 shows the "most popular year" for each subject. As would be expected, the academic subjects are found chiefly in the first year—English, modern language, and mathematics. Also, the sciences, inorganic chemistry and botany, are included here. Agricultural work is begun with field crops, animal industry, and shop work. An equal number of colleges require qualitative chemistry in the first and in the second year.

The second year sees a considerable expansion of the curriculum, and a great variation among the colleges. The outstanding subjects are physics, zoology, and chemistry (organic, qualitative, and quantitative) among the sciences, and soils, fruit growing, and dairy husbandry among agricultural subjects.

TABLE 4.—*Summary showing the year in which each subject is required in the largest number of colleges.*

FIRST YEAR.

Subjects.[1]	Number of colleges requiring subject in year indicated.[2]	Most common requirement for given year.		
		Hours per week.	Number of semesters.	Number of colleges.
English	46	3	2	33
Modern language	11	3	2	8
Library work	5	1	1	5
History	(3)5	3	1	3
Physical training	18	1	2	15
Hygiene	7	1	1	3
Military science	46	1	2	23
Algebra	18	3	1	7
Geometry (solid, analytical)	4	4	1	2
Trigonometry	21	3	1	10
Agricultural mathematics	4	3	1	2
Inorganic chemistry	40	4	2	15
Qualitative chemistry	(2)12	2,3 or 4	1	9
Botany, general	34	3	2	11
Botany, agricultural	4	2,3 or 4	1 or 2	4
General agriculture	6	1	1	3
Field crops	18	3	1	7
Animal industry	34	3	1	10
Drawing	16	2	1	6
Shop work	12	1	2	5
SECOND YEAR.				
Public speaking	8	2 or 3	1	6
Physics	20	3	2	8
Geology	10	3	1	8
Qualitative chemistry	(1)12	2	1	5
Quantitative chemistry	11	2	1	6
Organic chemistry	22	3 or 4	1	14
Agricultural chemistry	14	5	1	7
Breeding	(3,4)4	3	1	2
Physiology	4	2,3,4 or 5	1 or 2	4
Zoology	22	3	2	9
Entomology	9	3 or 4	1	8
Plant physiology	5	2	2	2
Plant pathology	3	3	1	2
Soils	20	3	1	8
Soil physics	8	4	1	5
Grain crops	5	3	1	2
Forage crops	5	3	1	3
Fruit growing	14	3	1	6
Pomology	6	3	1	4
Olericulture	8	3	1	5
Plant propagation	7	3	1	5
Landscape horticulture	3	2	1	2
Dairy husbandry	20	3	1	15
Poultry husbandry	9	2 or 3	1	6
Surveying	9	2 or 3	1	6
Farm mechanics	8	3	1	4
THIRD YEAR.				
History	(1)5	3	2	3
Sociology	3	3	1	2
Breeding	(2,4)4	2	1	2
Bacteriology	14	3	1	8
Nutrition	8	3	1	7
FOURTH YEAR.				
onomics	12	3	1	7
ural economics	7	3	1	5
aw (political science)	3	3	1	2
arm management	11	3	1	5
eterinary science	6	3	1 or 2	4
reeding	(2,3)4	3	1	3
hesis	6	2	2	2

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[1] Subjects mentioned on p. 16 are not given here, since each is required in only one college.

[2] The numbers in parentheses indicate another year in which the respective subjects are required in equal number of colleges.

Bacteriology and nutrition appear to be third-year subjects. The numbers for the other junior-year subjects are small, but such as are given show an equal number in the first and third year for history, and in the second, third, and fourth years for breeding. The number for sociology is too small to mean much.

The fourth year includes economics (general and rural), farm management, and veterinary science.

Again, it should be pointed out that these data must be interpreted liberally, with due allowance for the limitations of the study. As this applies only to required work, the position of any subject is shown only for the colleges in which it is required. This is the explanation of so many subjects falling in the sophomore year, and so few in the junior and senior years. Nevertheless, the table is suggestive, and indicates clearly certain tendencies. By comparing the figures opposite each subject with the number of colleges requiring it shown in diagram 1, an idea of their value can be obtained.

HOW MUCH TIME SHALL BE GIVEN TO A SUBJECT?

The number of credit hours a week and the number of semesters per year devoted to each subject in the largest number of colleges are shown in Table 5. The table is self-explanatory, and little comment is necessary.

Hygiene, library work, and general agriculture (as a distinct subject) are required in but few colleges, but they appear to be 1-hour 1-semester subjects. Public speaking, physical training, and military training occur most frequently as 1-hour 2-semester subjects. Three hours a week is the most common assignment, and of the 39 subjects falling in this class, 33 are for 1 semester, 5 for 2 semesters, and 1 is tied between 1 and 2 semesters. This, it must be remembered, is for required work only. It seems quite certain that for advanced courses, given as free or group electives for specialization, a larger amount of time is awarded, on the average, than is shown here for required work.

Three hours a week for one semester is certainly insufficient for English, modern language, physics, zoology, and botany when they are required; and this is borne out by the data assembled. Each of these subjects falls in the 3-hour 2-semester group.

Only 3 subjects fall in the 4-hour group and 2 in the 5-hour group. Of the former, soil physics is a 1-semester subject and inorganic chemistry continues for 2 semesters. The number of colleges requiring geometry is insignificant. Agricultural chemistry claims 5 hours a week for 1 semester, and physiology is tied for 1 semester in the 3-hour and the 5-hour classes, but the number is so small as to be of little significance.

TABLE 5.—*Distribution of subjects by semester hours per week and number of semesters per year.*

Subjects.	Number of colleges in which subject is required for given number of hours per week.									
	One hour.		Two hours.		Three hours.		Four hours.		Five hours	
	1 semester.	2 semesters.	1 semester.	2 semesters.	1 semester.	2 semesters.	1 semester.	2 semesters.	1 semester.	2 semesters.
Library work	5									
General agriculture	3									
Hygiene	3									
Public speaking		6								
Physical training		22								
Military science		48								
Shop work		5		5						
Qualitative chemistry			8		8					
Quantitative chemistry			7							
Plant physiology			2	2	2					
Plant pathology			3		3					
Fertilizers and manures			3							
Grain crops			2	2	2					
Forestry			2		2					
Landscape horticulture			3							
Poultry husbandry			5		5					
Farm accounts			2							
Surveying			5							
Drawing			6							
Farm mechanics			8							
Thesis				2						
History					6					
Economics					11					
Rural economics					10					
Law (political science)					3	3				
Sociology					3					
Algebra					7					
Trigonometry					10					
Agricultural mathematics					2					
Geology					13					
Organic chemistry					12					
Breeding					6					
Physiology					2				2	
Bacteriology					15					
Entomology					9					
Botany, agricultural					2					
Soils					12					
Field crops					14					
Forage crops					4					
Fruit growing					11					
Pomology					6					
Olericulture					7					
Plant propagation					8					
Animal industry					17					
Nutrition					10					
Veterinary science					6					
Dairy husbandry					21					
Farm management					9					
Rural engineering					4					
English						45				
Modern language						14				
Physics						13				
Zoology						16				
Botany (general)						12				
Geometry (solid and analytical)							2			
Soil physics							7			
Chemistry, inorganic								19		
Chemistry, agricultural									8	

IV. BALANCING THE CURRICULUM.

It is generally accepted that the four-year course should not be confined narrowly to any one type of work, but that it should include a certain amount of the different types of subject matter in order to give the student a well-rounded training. While the aim of the course is to prepare for the profession of agriculture, it must not be limited to agricultural subjects alone. The reasons for this are obvious. Many agricultural subjects are dependent upon prerequisite courses of the fundamental type, such as chemistry or botany. The aim of a college course leading to a bachelor's degree is more than vocational; it should train for the highest type of citizenship. For this reason the liberal, or academic, studies have an important and essential place. But granted that the student should pursue some work of these different types, what is the proper proportion of each?

Another factor in balancing the curriculum is that of the proportion of work to be required. How much should be required, how much offered as prescribed electives, and how much as free electives?

A study of this phase of the problem was accordingly undertaken. For this purpose all subjects were classified in the following five groups:

1. *Academic.*—All liberal subjects such as English, foreign language, social science, history, and mathematics, and also physical and military training.
2. *Scientific.*—All subjects commonly known as the sciences, except those which are strictly applied science in the field of agriculture; for example, botany, chemistry, and zoology.
3. *General agriculture.*—All agricultural subjects, including strictly applied agricultural science, except the professional or specialized subjects; for example, soils, crops, dairy husbandry.
4. *Special agriculture.*—All agricultural subjects pursued as a specialized group for professional preparation. For instance, in a departmental group course in horticulture, such subjects as pomology, small fruits and nursery practice would be classed as special agriculture.
5. *Free elective.*—All electives which would not fall in any of the preceding four groups.

The outlines of the four-year courses in the catalogues were studied carefully and the number of credit hours a week devoted to subjects in each of these groups tabulated for each year and for the total course. The proportion of time falling in each of these groups was then determined on a percentage basis.

At the same time another classification was made in a similar way for the following groups:

1. *Required.* All work required of all four-year students.

2. *Prescribed elective.* Subjects which were elective to a certain degree, and yet were limited by some degree of requirement; for example, optionals and group electives.

3. *Free electives.* The classification in the latter two sets of groups required a great deal of painstaking study and care. In many instances it was necessary to refer to the descriptive outline of a course to determine its proper place. Occasionally certain inconsistencies were found in the catalogues, and many special cases arose calling for individual judgment. Also, the number of determinations was so great that it is not improbable that some errors have crept in. However, the figures were cross-checked in two or three different ways, and the writer has reason to believe that they are substantially accurate.

The determinations were relatively easy when a single set of studies was pursued by all students for any given term or semester. However, the differentiation of work among the departmental group electives complicated matters considerably. In such cases it became necessary to make the classification for each departmental group, and take the average of the groups as the figures for the college. For instance, if a college offered a single course in the first and second years, and departmental group electives in agronomy, animal husbandry, and horticulture for the third and fourth years, it was necessary to make but one classification for the first two years, but for the third and fourth years the classification was made for each of the departmental groups, and then the average for each class (academic, scientific, etc.) taken for the college classification.

As a matter of record, the classification of the individual subjects is given. Obviously, subjects placed in the "Special agriculture" class vary with the different special groups of studies pursued. This in turn would affect the general agriculture class, and occasionally the academic and scientific classes. However, it may be understood that when a subject appears in the "Special agriculture" class for any college, it would not be included in any of the other classes for the same college.

The classification follows:

Academic.

English.
Agricultural literature.
Literature of farm life and county.
Farm literature.
Composition.
Agricultural journalism.
Agricultural publicity.
Industrial publicity.
Technical journalism.
Argumentation.
Public speaking.
Extemporaneous speaking.
Foreign language.
History.
English economic history.
American economic history.
History of agriculture.
History of American agriculture.
History of American horticulture.
Civil government.
National government.
State and municipal government.

Special Agriculture—Agricultural Education Group.

Agricultural extension and demonstration.
Administration of high-school agriculture.
Administration of schools.
Child development and adolescence.
Classroom management and practice.
Entomology for teachers.
Extension teaching.
High-school problems.
History of education.
Home and school gardening.
Methods of teaching.
Observation and curriculum.
Organization and materials.
Pedagogy of agriculture.
Practice teaching.
Principles of education.
Psychology.
Research and thesis.
Rural education.
Rural organization.
School hygiene.
School organization and management.
Secondary and vocational education.
Secondary education.
Teachers' college.
Teaching of agriculture.
Teaching process.
Thesis.
Training in teaching agriculture.
Vocational education.

Special Agriculture—Agricultural Engineering Group.

Automobiles.
Drawing.
Farm buildings.
Farm concrete.
Farm machinery.
Farm mechanics.
Farm motors.
Farm structures.
History of irrigation.
Hydraulics.
Irrigation.
Irrigation engineering.
Map drawing.
Masonry construction.
Pump and power problems.
Repair of farm machinery.
Rural engineering.
Surveying.
Terracing.
Tractors.

Special Agriculture—Agronomy Group.

Agricultural chemistry.
Agrostology.
Bulletin review.
Cereals.
Chemistry of soils, fertilizers, etc.
Corn breeding.
Cotton.
Crop breeding.
Crop improvement.
Crop and garden entomology.
Diseases of field crops.
Drainage.
Farm crops.
Fertilizers.
Field crops
Field management.
Forage crop breeding.
Forage crops
Grain judging.
Irrigation.
Irrigation engineering.
Methods of investigation.
Plant breeding.
Plant culture.
Plant pathology.
Potato growing.
Seminar.
Small grain breeding.
Special crops.
Soil bacteriology.
Soil fertility.
Soil management.
Soil physics.
Soil technology.
Soils.
Thesis.
Weeds and seed testing.

Special Agriculture—Animal Husbandry Group.

Animal breeding.
Animal chemistry.
Animal diseases.
Animal histology and embryology.
Animal nutrition.
Animal parasites.
Animal production.
Anatomy of farm animals.
Beef cattle and sheep production.
Beef production.
Breeds of live stock.
Bulletin review.
Butter making.
Common diseases.
Comparative anatomy.
Comparative physiology.
Dairy cattle feeding.
Dairy stock judging.
Dressing and curing meats.
Embryology of domestic animals.
Farm sanitation.
Feeding.
Feeding and marketing horses.
Feeds and feeding.
Handling and fitting live stock.
Herd book study.
Horse, swine, and dairy cattle.
History of breeds.
Hygiene and sanitation for animals.
Judging.
Live-stock economics.
Live-stock judging.
Live-stock management.
Live-stock practicums.
Live-stock records.
Market classes of live stock.
Market milk.
Marketing.
Meat production.
Meats.
Milk production.
Obstretrics.
Pedigree work.
Physiology of domestic animals.
Practicums.
Principles of animal breeding.
Research.
Sanitary science.
Seminar.
Sheep production.
Soundness and shoeing.
Swine production.
Testing milk and cream.
Thesis.
Veterinary hygiene and sanitation.
Veterinary science.

Special Agriculture—Botany Group.

Botanical drawing.
Classification of plants.
Crop diseases.
Forestry.
Plant anatomy.
Plant histology.
Plant materials.
Plant pathology.
Taxonomic botany.

Special Agriculture—Dairy Husbandry Group.

Agriculture advertising.
Animal breeding.
Animal chemistry.
Animal nutrition.
Animal parasites.
Bulletin review.
Butter judging.
Butter making.
Cheese making.
Chemistry of dairy products.
Common diseases.
Comparative anatomy.
Comparative physiology.
Dairy bacteriology.
Dairy breeds.
Dairy chemistry.
Dairy engineering.
Dairy literature.
Dairy sanitation.
Dairy technology.
Dairy research.
Dairying.
Embryology of domestic animals.
Factory management.
Factory operation.
Farm sanitation and communicable diseases.
Feeding and management of live stock.
Ice cream and ices.
Inspection of milk products.
Judging dairy cattle.
Judging dairy products.

Live-stock judging.
Live-stock management.
Management of the dairy herd.
Management of dairy plants.
Market classes of live stock.
Market milk.
Milk fermentation.
Milk production.
Milk products.
Milk technology.
Milk testing and inspection.
Obstetrics.
Physiology of domestic animals.
Principles of breeding.
Pure-bred herds.
Sanitary science.
Seminar.
Thesis.
Veterinary science.

Special Agriculture—Entomology Group.

Entomology.
Forest insects.
Insecticides, fungicides.
Plant pathology.

Special Agriculture—Farm Management Group.

Accounting and management of cooperative enterprises.
Economical organization of agriculture.
Farm accounts.
Farm management.
Field work.
Research.
Seminar.
Thesis.

Special Agriculture—Horticulture Group.

Architectural drawing.
Bulletin review.
Canning.
Canning and handling by-products.
Citrus culture.
Commercial pomology.
Control of insect pests.
Crop diseases.
Deciduous and subtropical fruits.
Engineering drawing.
Experimental horticulture.
Floriculture.
Floral decorations.
Forcing vegetables.
Forestry.
Fruit and vegetable judging.
Fruit farm management.
Fruit growing.
Garden flowers.
Greenhouse construction.
History and economics of horticultural research.
History of cultivated plants.
Home floriculture.
Horticultural entomology.
Horticultural literature.
Horticultural pathology.
Insects and diseases of citrus fruits.
Landscape gardening.
Market gardening.
Markets and marketing.
Nursery practice.
Plants.
Plant breeding.
Plant-disease control.
Plant evolution.
Plant materials.
Plant pathology.
Practical pomology.
Pruning and orchard practice.
Seminar.
Small-fruit culture.
Small fruits.
Special problems.
Spraying.
Subtropical fruits.
Systematic pomology.
Tree repair.
Truck farming.
Vegetable gardening.
Vegetable literature.
Vegetable physiology.

Special Agriculture—Poultry Husbandry Group.

Animal breeding.
Animal parasites.
Breed types of poultry.
Commercial poultry farming.
Comparative physiology.
Domestic fowls.

Farm sanitation and communicable diseases.
Feeding, care, and management.
Housing.
Incubation and breeding.
Market poultry.
Marketing.
Marketing and judging poultry products.
Poultry anatomy and physiology.
Poultry bacteriology.
Poultry feeding.
Poultry judging.
Poultry literature.
Poultry management.
Poultry parasites, diseases and hygiene.
Poultry research.
Reproduction.
Selection, breeding and housing.
Seminar.
Thesis.
Veterinary science.

Special Agriculture—Soils Group.

Agricultural geology.
Chemical analysis of soils.
Drainage.
Mechanical analysis of soils.
Mineralogy.
Soil chemistry.
Soil fertility.
Soil physics.
Soil physics and management.
Soil productivity.
Soil surveying.
Research.
Thesis.

If two or more subjects were offered as optionals, and were of the same type of work, they were placed in the corresponding class. This was true of most optionals encountered. However, there were some instances when the optionals were not of the same type, and then the amount of time devoted to them was classified as "elective."

In case a college provided specialization through the offering of combinations of "majors" and "minors," the time devoted to the majors was classified as "special agriculture," while minors were classed as "electives." The systems of offering majors and minors varied so considerably in different colleges that it was necessary in some cases to approximate the proportions in the last two years, but this was done as accurately as possible after a careful study of the details of each system.

The classification of subjects in the required, prescribed elective, and free elective groups was relatively easy. The time devoted to subjects required of all students was placed in the first group. Optionals, majors and minors, and the prescribed work in the departmental group electives (with the exception of subjects required in all groups) were classed as prescribed electives. In some colleges an elective system is in effect in which there is a large degree of choice as to individual subjects, but a specified number of credits must be taken from certain listed groups of subjects. These also were considered as prescribed electives. Free electives include all electives allowing perfect freedom of choice.

The results of these two classifications are shown in Table 6 and diagrams 2, 3, 5, and 6.

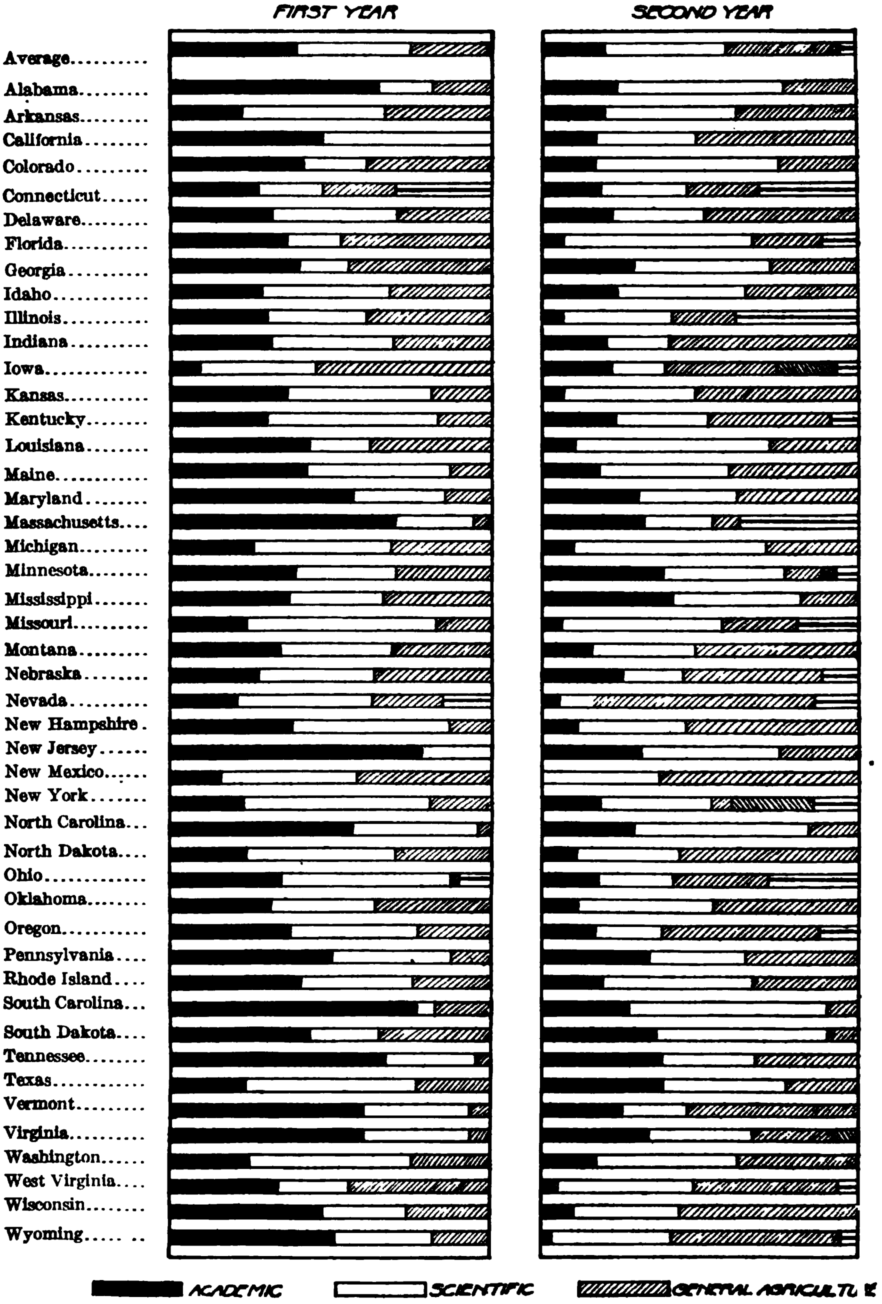

DIAGRAM 2.—*Distribution of types of work in colleges of agriculture, by years.*

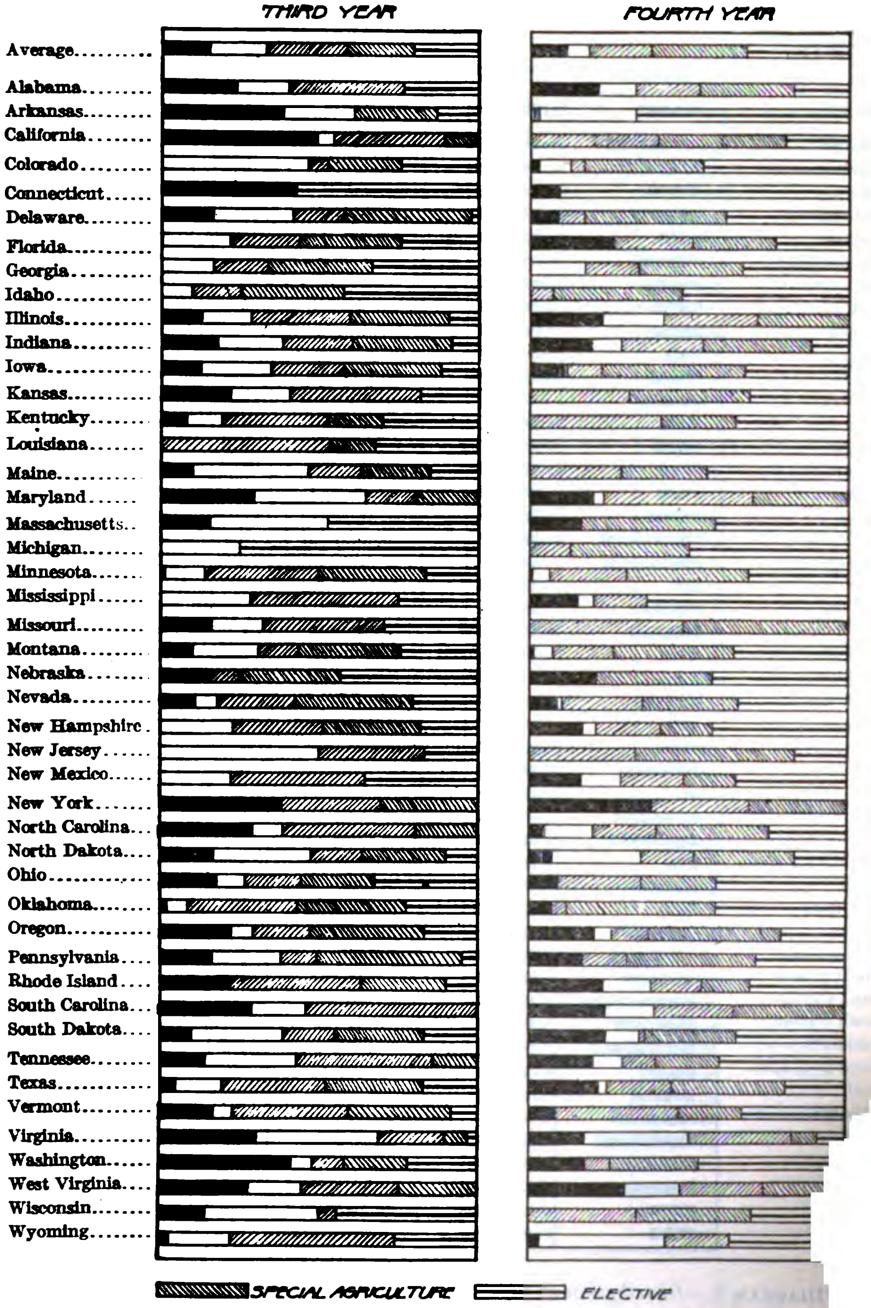

DIAGRAM 2.—*Distribution of types of work in colleges of agriculture, by years.*

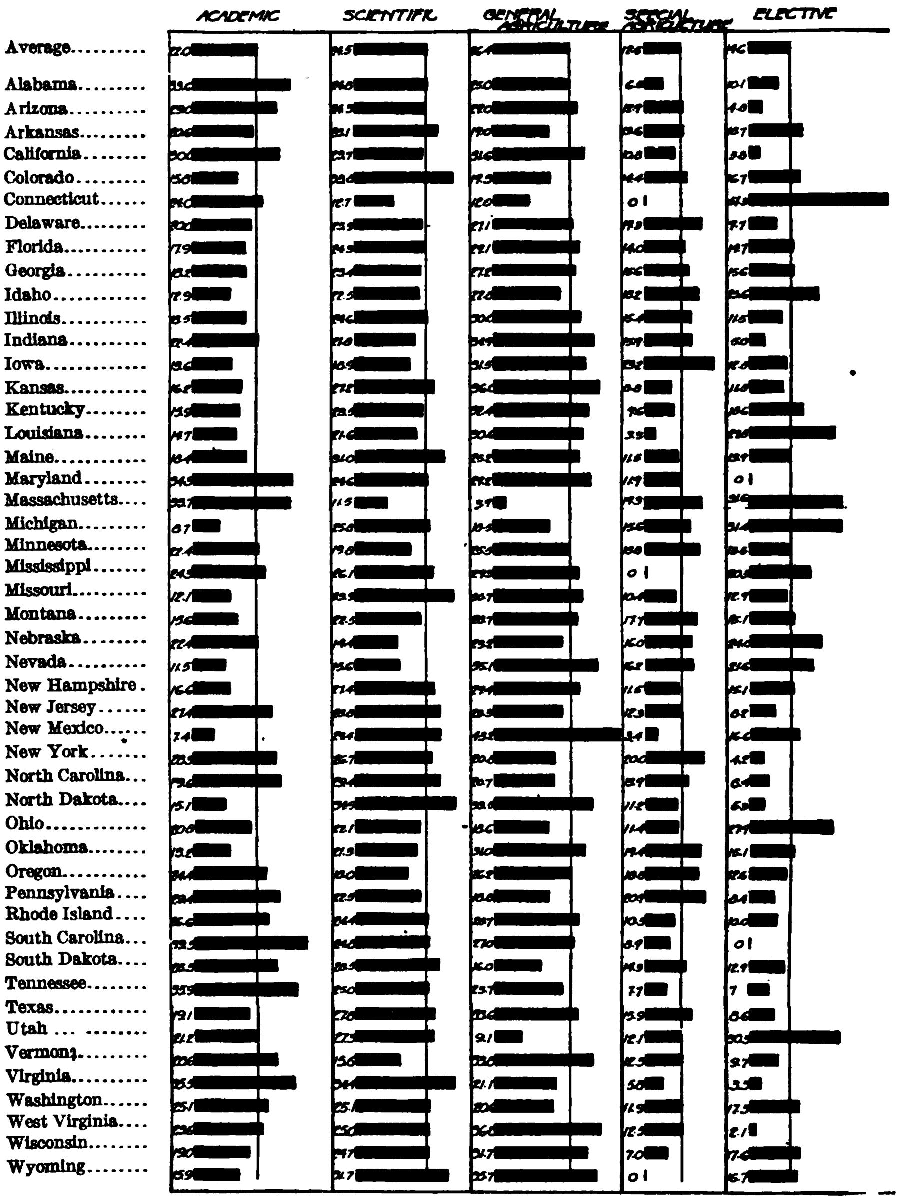

DIAGRAM 3.—*Distribution of types of work in colleges of agriculture, total course.*

TABLE 6.—*Distribution of work in the curricula of the State colleges of agriculture*—PART I.

Colleges.	First year.					Second year.					Third year.					Fourth year.					Total course.					
	Academic.	Scientific.	General agriculture.	Special agriculture.	Elective.	Academic.	Scientific.	General agriculture.	Special agriculture.	Elective.	Academic.	Scientific.	General agriculture.	Special agriculture.	Elective.	Academic.	Scientific.	General agriculture.	Special agriculture.	Elective.	Academic.	Scientific.	General agriculture.	Special agriculture.	Total agriculture.	Elective.
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
Alabama	64.8	16.3	18.9	0	0	23.7	51.3	25.0	0	0	24.0	16.0	36.0	0	24.0	21.4	12.2	19.3	29.4	17.7	33.6	24.8	25.0	6.5	31.5	10.1
Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.0	24.3	29.0	12.9	41.9	4.8
Arkansas	22.2	44.5	33.3	0	0	19.5	41.6	38.9	0	0	38.5	22.2	0	26.2	13.3	0	1.2	1.9	30.0	66.9	20.6	28.1	19.0	13.6	32.6	18.7
California	47.1	52.9	0	0	0	16.6	30.6	52.8	0	0	48.6	5.7	34.3	11.4	0	0	0	40.0	40.0	20.0	30.0	23.7	31.6	10.8	42.4	3.8
Colorado	41.5	19.5	39.0	0	0	16.5	57.5	26.0	0	0	0	46.8	5.8	23.0	24.4	2.7	9.5	4.0	37.8	46.0	15.8	33.8	19.3	14.4	33.7	16.7
Connecticut	27.5	20.0	22.5	0	30.0	17.5	27.5	22.5	0	32.5	42.9	0	0	0	57.1	8.6	0	0	0	91.4	24.0	12.7	12.0	0	12.0	51.3
Delaware	31.8	39.0	29.2	0	0	21.4	28.6	50.0	0	0	16.7	25.0	16.7	38.9	2.7	8.3	0	8.3	44.5	38.9	20.0	23.9	27.1	19.3	46.4	9.7
Florida	36.1	16.7	47.2	0	0	6.3	59.4	21.8	0	12.5	0	21.9	21.9	31.8	24.4	26.6	0	24.4	25.6	23.4	17.9	24.3	29.1	14.0	43.1	14.7
Georgia	40.0	15.0	45.0	0	0	28.6	42.8	28.6	0	0	0	16.7	16.7	33.3	33.3	0	16.7	16.7	33.3	33.3	18.2	23.4	27.2	15.6	42.8	15.6
Idaho	28.3	39.7	32.0	0	0	23.0	40.4	36.6	0	0	0	9.7	15.3	32.5	42.5	0	0	7.3	40.6	52.1	12.9	22.5	22.8	18.2	41.0	23.6
Illinois	30.3	30.3	39.4	0	0	6.7	33.3	20.0	0	40.0	12.5	15.7	31.2	31.2	9.4	22.8	20.0	28.6	28.6	0	18.5	24.6	30.0	15.4	45.4	11.5
Indiana	31.1	37.8	31.1	0	0	19.5	19.5	61.0	0	0	18.6	19.9	21.7	31.8	8.5	19.3	8.9	26.2	33.8	11.8	22.4	21.8	34.9	15.9	50.8	5.0
Iowa	8.4	36.4	55.2	0	0	21.6	15.7	35.7	18.9	8.1	13.0	21.6	23.0	30.5	11.9	10.8	0.6	11.1	45.0	32.5	13.6	18.9	31.5	23.2	54.7	12.8
Kansas	36.1	44.4	19.5	0	0	5.5	41.7	52.8	0	0	21.9	18.7	40.7	0	18.7	0	0	31.2	37.5	31.3	16.2	27.2	36.0	8.8	44.8	11.8
Kentucky	30.6	52.7	16.7	0	0	23.1	28.2	38.4	0	10.3	8.3	11.1	33.3	16.7	30.6	0	0	41.2	23.5	35.3	15.9	23.5	32.4	9.6	42.0	18.6
Louisiana	43.3	18.3	38.1	0	0	10.7	60.8	28.5	0	0	0	0	53.1	14.1	32.8	0	0	0	0	100.0	14.7	21.6	30.6	3.3	33.9	29.8
Maine	42.9	44.2	13.0	0	0	17.5	40.0	42.5	0	0	10.7	35.8	16.1	21.9	15.5	0	0	28.6	26.8	44.6	18.4	31.0	25.2	11.5	36.7	13.9
Maryland	56.8	28.4	14.8	0	0	29.7	30.8	39.5	0	0	29.3	34.8	16.7	19.2	0	20.0	3.6	46.3	30.1	0	34.3	24.6	29.2	11.9	41.1	0
Massachusetts	70.0	23.3	6.7	0	0	31.7	21.7	8.3	0	38.3	15.8	0	0	36.8	47.4	15.8	0	0	42.1	42.1	33.7	11.5	3.9	19.3	23.2	31.6
Michigan	25.0	43.3	31.7	0	0	10.0	60.0	30.0	0	0	0	0	0	25.0	75.0	0	0	12.5	37.5	50.0	8.7	25.8	18.5	15.6	34.1	31.4
Minnesota	38.5	30.8	30.7	0	0	37.7	37.6	11.0	5.5	8.2	1.4	12.8	35.5	34.2	16.1	1.2	4.9	24.3	38.4	31.2	22.4	19.8	25.5	18.8	44.3	13.5
Mississippi	36.7	29.3	34.0	0	0	40.9	39.4	19.7	0	0	0	28.3	46.7	0	25.0	15.0	5.0	16.7	0	63.3	24.3	26.1	29.3	0	29.3	20.8
Missouri	23.6	58.8	17.6	0	0	5.9	50.0	23.5	0	20.6	16.1	16.1	38.7	0	29.1	0	0	48.0	52.0	0	12.1	33.9	30.7	10.4	41.1	12.9
Montana	34.2	34.2	31.6	0	0	15.8	31.6	52.6	0	0	10.8	20.2	12.6	32.2	24.2	1.6	5.6	18.1	33.4	36.3	15.6	22.9	28.7	17.7	46.4	15.1
Nebraska	27.2	36.4	36.4	0	0	25.0	18.8	43.7	0	12.5	15.6	0	9.4	31.3	43.7	21.4	0	0	35.7	42.9	22.4	14.4	23.2	16.0	39.2	24.0
Nevada	21.1	42.1	21.1	0	15.7	5.3	10.6	68.4	0	15.7	11.1	6.6	25.0	36.4	20.9	8.3	1.9	25.0	30.0	34.8	11.5	15.6	35.1	16.2	51.3	21.6
New Hampshire	37.8	48.7	13.5	0	0	11.1	33.3	55.6	0	0	0	22.8	28.7	30.1	18.4	16.9	4.2	20.2	16.0	42.7	16.6	27.4	29.4	11.5	40.9	15.1
New Jersey	77.8	22.2	0	0	0	31.6	42.1	26.3	0	0	0	50.0	33.3	0	16.7	0	0	33.3	50.0	16.7	27.4	28.8	23.3	12.3	35.6	8.2
New Mexico	15.8	42.1	42.1	0	0	0	36.3	63.4	0	0	0	22.4	42.1	0	35.5	16.1	12.9	19.4	16.1	35.5	7.4	29.4	43.2	3.4	46.6	16.6
New York	22.2	58.3	19.5	0	0	18.8	34.4	6.2	25.0	15.6	38.4	0	30.8	30.8	0	38.4	0	30.8	30.8	0	28.3	26.7	20.8	20	40.8	4.2

TABLE 6.—*Distribution of work in the curricula of the State colleges of agriculture*—PART I—Continued.

Colleges.	First year.					Second year.					Third year.					Fourth year.					Total course.					
	Academic.	Scientific.	General agriculture.	Special agriculture.	Elective.	Academic.	Scientific.	General agriculture.	Special agriculture.	Elective.	Academic.	Scientific.	General agriculture.	Special agriculture.	Elective.	Academic.	Scientific.	General agriculture.	Special agriculture.	Elective.	Academic.	Scientific.	General agriculture.	Special agriculture.	Total agriculture.	Elective.
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
North Carolina	56.5	39.1	4.4	0	0	29.1	54.2	16.7	0	0	29.2	9.6	41.2	20.0	0	5.0	15.0	20.0	35.0	25.0	29.6	29.4	20.7	13.9	50.1	6.4
North Dakota	23.1	46.2	30.7	0	0	11.1	31.9	57.0	0	0	17.1	30.4	16.1	26.3	9.8	7.2	27.8	16.7	31.4	16.9	15.1	34.9	33.5	11.2	44.7	5.3
Ohio	34.2	52.7	2.6	0	10.5	17.7	23.5	29.4	0	29.4	17.7	8.8	17.7	23.5	32.3	8.8	0	26.5	23.5	41.2	20.0	22.1	18.6	11.4	30.0	27.9
Oklahoma	31.2	32.1	36.7	0	0	11.2	43.0	45.8	0	0	2.2	6.8	34.1	34.6	22.3	7.0	0	4.8	47.0	41.2	13.2	21.3	31.0	19.4	50.4	15.1
Oregon	37.7	39.1	23.2	0	0	16.5	20.6	49.2	0	13.7	22.8	6.4	18.3	35.6	16.9	20.7	5.0	12.1	42.1	20.1	24.4	18.0	26.2	18.8	45.0	12.6
Pennsylvania	50.0	37.5	12.5	0	0	33.8	30.1	36.1	0	0	16.1	22.2	11.4	45.1	5.2	16.9	0	14.0	40.4	28.7	29.4	22.5	18.8	20.9	39.7	8.4
Rhode Island	40.8	34.5	24.7	0	0	19.5	46.3	34.2	0	0	22.8	0	40.5	26.6	10.1	23.1	15.4	15.4	15.4	30.7	26.6	24.4	28.7	10.3	39.0	10.0
South Carolina	76.3	5.9	17.8	0	0	27.4	61.5	11.1	0	0	28.9	17.0	54.1	0	0	24.4	14.8	25.2	35.6	0	39.3	24.8	27.0	8.9	35.9	0
South Dakota	43.2	21.7	35.1	0	0	35.1	54.1	10.8	0	0	9.6	29.2	16.4	27.8	17.0	25.0	9.3	1.8	29.3	34.6	28.3	28.5	16.0	14.3	30.3	12.9
Tennessee	66.7	28.5	4.8	0	0	38.1	28.5	33.3	0	0	14.3	28.5	42.9	14.3	0	20.0	10.0	10.0	20.0	40.0	35.9	25.0	23.7	7.7	31.4	7.7
Texas	23.8	52.4	23.8	0	0	38.1	38.1	23.8	0	0	5.2	14.5	32.5	30.4	17.4	22.7	2.6	19.6	36.6	18.5	19.1	27.8	28.6	15.9	44.5	8.6
Utah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21.2	27.3	9.1	12.1	21.2	30.3
Vermont	59.6	33.3	7.1	0	0	25.0	20.0	55.0	0	0	16.7	5.6	36.1	33.3	8.3	8.3	0	38.9	19.5	33.3	28.6	15.6	33.8	12.3	46.1	9.7
Virginia	59.7	33.8	6.5	0	0	33.5	32.2	25.9	8.4	0	30.2	38.4	20.8	6.9	3.7	17.5	32.9	32.2	8.0	9.4	35.5	34.4	21.1	5.8	26.9	3.3
Washington	24.1	50.6	25.3	0	0	17.1	43.9	39.0	0	0	41.5	6.2	10.2	19.7	22.4	18.0	0	7.4	28.2	46.4	25.1	25.1	20.6	11.9	32.5	17.3
West Virginia	33.3	22.2	44.5	0	0	5.3	42.1	44.7	0	7.9	27.8	16.7	30.5	25.0	0	29.4	17.8	26.4	26.4	0	23.6	25.0	36.8	12.5	49.3	2.1
Wisconsin	47.4	26.3	26.3	0	0	10.0	32.5	57.5	0	0	14.7	35.3	5.9	0	44.1	0	0	33.3	33.3	33.4	19.0	24.7	31.7	7.0	38.7	17.6
Wyoming	51.5	30.3	18.2	0	0	3.1	37.5	53.1	0	6.3	3.2	19.4	51.6	0	25.8	3.3	40.0	20.0	0	36.7	15.9	31.7	35.7	0	35.7	16.7
Average	39.3	35.1	24.4	0	1.2	19.9	37.1	35.9	1.2	5.9	15.5	17.3	25.3	21.5	20.4	11.6	6.5	19.6	29.7	32.5	22.0	24.5	26.4	12.5	38.9	14.6

TABLE 6.—*Distribution of work in the curricula of the State colleges of agriculture*—PART II.

Colleges.	First year.				Second year.				Third year.				Fourth year.				Total course.			
	Re-quired.	Elective.			Re-quired.	Elective.			Re-quired.	Elective.			Re-quired.	Elective.			Re-quired.	Elective.		
		Pre-scribed.	Free.	Total.		Pre-scribed.	Free.	Total.		Pre-scribed.	Free.	Total.		Pre-scribed.	Free.	Total.		Pre-scribed.	Free.	Total.
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
Alabama	100.0	0	0	0	100.0	0	0	0	64.0	36.0	0	36.0	4.6	75.8	19.6	95.4	69.7	26.0	4.3	30.3
Arizona	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	50.0	45.2	4.8	50.0
Arkansas	100.0	0	0	0	100.0	0	0	0	55.6	33.3	11.1	44.4	0	62.5	37.5	100.0	65.8	22.8	11.4	34.2
California	88.2	11.8	0	11.8	93.1	6.9	0	6.9	34.3	65.7	0	65.7	48.0	32.0	20.0	52.0	67.4	28.8	3.8	36.2
Colorado	100.0	0	0	0	100.0	0	0	0	0	75.6	24.4	100.0	0	53.8	46.2	100.0	52.5	30.8	16.7	47.5
Connecticut	70.0	0	30.0	30.0	67.5	0	32.5	32.5	42.9	0	57.1	57.1	8.6	0	91.4	91.4	48.7	0	51.3	51.3
Delaware	100.0	0	0	0	100.0	0	0	0	58.3	38.9	2.8	41.7	22.2	38.9	38.9	77.8	72.3	18.0	9.7	27.7
Florida	100.0	0	0	0	65.6	21.9	12.5	34.4	18.8	56.8	24.4	81.2	0	76.6	23.4	100.0	47.8	37.6	14.6	52.5
Georgia	100.0	0	0	0	100.0	0	0	0	0	66.7	33.3	100.0	0	66.7	33.3	100.0	53.3	31.1	15.6	46.7
Idaho	100.0	0	0	0	85.6	8.6	5.8	14.4	5.6	51.9	42.5	94.4	0	47.9	52.1	100.0	47.9	27.1	25.0	52.1
Illinois	100.0	0	0	0	60.0	0	40.0	40.0	12.5	78.1	9.4	87.5	0	100.0	0	100.0	42.3	46.2	11.5	57.7
Indiana	100.0	0	0	0	80.5	19.5	0	19.5	30.2	69.8	0	69.8	28.3	71.7	0	71.7	60.7	39.3	0	39.3
Iowa	100.0	0	0	0	26.5	73.5	0	73.5	17.8	70.3	11.9	82.2	0	67.5	32.5	100.0	36.5	52.9	10.6	63.5
Kansas	100.0	0	0	0	100.0	0	0	0	52.1	28.1	18.8	46.9	0	68.9	31.1	100.0	65.5	22.7	11.8	34.5
Kentucky	100.0	0	0	0	89.7	10.3	0	10.3	52.8	16.7	30.5	47.2	0	64.7	35.3	100.0	62.1	22.1	15.8	37.9
Louisiana	100.0	0	0	0	100.0	0	0	0	43.8	56.2	0	56.2	0	80.0	20.0	100.0	64.7	30.9	4.4	35.3
Maine	100.0	0	0	0	100.0	0	0	0	26.7	57.7	15.6	73.3	20.9	34.5	44.6	79.1	63.9	22.2	13.9	36.1
Maryland	100.0	0	0	0	100.0	0	0	0	57.3	42.7	0	42.7	32.0	68.0	0	68.0	73.4	26.6	0	26.6
Massachusetts	100.0	0	0	0	61.7	38.3	0	38.3	0	52.6	47.4	100.0	0	57.9	42.1	100.0	41.5	36.7	21.8	58.5
Michigan	100.0	0	0	0	100.0	0	0	0	0	25.0	75.0	100.0	0	50.0	50.0	100.0	50.0	18.8	31.2	50.0
Minnesota	84.6	15.4	0	15.4	49.6	42.1	8.3	50.4	16.7	67.2	16.1	83.3	0	68.8	31.2	100.0	39.1	47.5	13.4	60.9
Mississippi	92.0	8.0	0	8.0	100.0	0	0	0	75.0	0	25.0	25.0	36.7	0	63.3	63.3	77.4	2.3	20.3	22.6
Missouri	100.0	0	0	0	79.4	0	20.6	20.6	51.6	29.0	19.4	48.4	0	100.0	0	100.0	62.1	27.4	10.5	37.9
Montana	92.1	7.9	0	7.9	89.5	10.5	0	10.5	21.5	53.2	25.3	78.5	0	63.8	36.2	100.0	51.2	33.6	15.2	48.8
Nebraska	81.8	18.2	0	18.2	68.8	18.7	12.5	31.2	25.0	31.2	43.8	75.0	21.4	35.7	42.9	78.6	50.4	25.6	24.0	49.6
Nevada	100.0	0	0	0	100.0	0	0	0	41.7	37.5	20.8	58.3	44.5	20.8	34.7	55.5	72.3	14.2	13.5	27.7
New Hampshire	100.0	0	0	0	100.0	0	0	0	41.1	40.6	18.3	58.9	33.7	23.6	42.7	66.3	68.9	16.0	15.1	31.1
New Jersey	100.0	0	0	0	100.0	0	0	0	83.3	0	16.7	16.7	0	83.3	16.7	100.0	71.2	20.6	8.2	28.8
New Mexico	100.0	0	0	0	100.0	0	0	0	59.2	40.8	0	40.8	48.4	16.1	35.5	51.6	78.7	13.9	7.4	21.3
New York	83.3	0	16.7	16.7	43.8	25.0	31.2	56.2	0	100.0	0	100.0	0	100.0	0	100.0	36.7	50.0	13.3	63.3

TABLE 6.—*Distribution of work in the curricula of the State colleges of agriculture*—PART II—Continued.

Colleges.	First year.				Second year.				Third year.				Fourth year.				Total course.			
	Re-quired.	Elective.			Re-quired.	Elective.			Re-quired.	Elective.			Re-quired.	Elective.			Re-quired.	Elective.		
		Pre-scribed.	Free.	Total.		Pre-scribed.	Free.	Total.		Pre-scribed.	Free.	Total.		Pre-scribed.	Free.	Total.		Pre-scribed.	Free.	Total.
	P.ct.	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*
North Carolina	100.0	0	0	0	100.0	0	0	0	39.6	60.4	0	60.4	0	75.0	25.0	100.0	59.5	34.2	6.3	40.5
North Dakota	100.0	0	0	0	100.0	0	0	0	32.6	67.4	0	67.4	40.5	59.5	0	59.5	75.1	24.9	0	24.9
Ohio	78.9	21.1	0	21.1	70.6	29.4	0	29.4	17.7	82.3	0	82.3	0	100.0	0	100.0	42.9	57.1	0	57.1
Oklahoma	100.0	0	0	0	100.0	0	0	0	10.2	67.5	22.3	89.8	8.3	50.5	41.2	91.7	56.8	28.2	15.0	43.2
Oregon	71.0	29.0	0	29.0	49.4	36.8	13.8	50.6	20.4	62.7	16.9	79.6	18.6	61.3	20.1	81.4	40.4	47.1	12.5	59.6
Pennsylvania	100.0	0	0	0	100.0	0	0	0	7.8	87.0	5.2	92.2	15.0	56.3	28.7	85.0	56.6	35.0	8.4	43.4
Rhode Island	100.0	0	0	0	100.0	0	0	0	54.5	35.4	10.1	45.5	56.4	12.8	30.8	43.6	78.1	11.9	10.0	21.9
South Carolina	100.0	0	0	0	100.0	0	0	0	100.0	0	0	0	39.3	60.7	0	60.7	84.8	15.2	0	15.2
South Dakota	100.0	0	0	0	100.0	0	0	0	57.4	25.7	16.9	42.6	16.0	49.5	34.5	84.0	68.2	18.9	12.9	31.8
Tennessee	100.0	0	0	0	100.0	0	0	0	85.7	14.3	0	14.3	40.0	0	60.0	60.0	84.6	3.8	11.6	15.4
Texas	100.0	0	0	0	100.0	0	0	0	46.7	53.3	0	53.3	34.3	65.7	0	65.7	71.7	28.3	0	28.3
Utah	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	0	69.7	30.3	100.0
Vermont	100.0	0	0	0	100.0	0	0	0	66.7	33.3	0	33.3	33.3	66.7	0	66.7	76.6	23.3	0	23.3
Virginia	100.0	0	0	0	76.9	23.1	0	23.1	83.0	17.0	0	17.0	55.0	45.0	0	45.0	79.0	21.0	0	21.0
Washington	100.0	0	0	0	100.0	0	0	0	19.9	57.7	22.4	80.1	7.4	46.2	46.4	92.6	56.8	26.0	17.2	43.2
West Virginia	100.0	0	0	0	92.1	0	7.9	7.9	58.3	41.7	0	41.7	0	100.0	0	100.0	63.9	34.0	2.1	36.1
Wisconsin	100.0	0	0	0	100.0	0	0	0	26.5	11.7	61.8	73.5	0	66.7	33.3	100.0	61.3	16.9	21.8	38.7
Wyoming	100.0	0	0	0	65.6	31.3	3.1	34.4	62.9	8.1	29.0	37.1	36.7	25.0	38.3	63.3	67.1	15.9	17.0	32.9
Average	96.6	2.4	1.0	3.4	87.3	8.6	4.1	12.7	38.7	44.5	16.8	61.3	16.3	55.9	27.8	83.7	59.7	28.1	12.2	40.3

TYPE OF WORK.

Some very interesting facts are discovered from a study of diagram 3. Considering the total four-year course, we find that the average in each of the classes for the 48 colleges is as follows:

Time given to the different classes of subjects.

		Per cent.
Academic		22.0
Scientific		24.5
General agriculture	26.4	
Special agriculture	12.5	
Total agriculture		38.9
Free elective		14.6
Total		100.0

These averages represent what is probably very nearly the proper balance of the curriculum, but of course are not definite proof. The wide variation in each class is interesting, and is brought out in the following table:

Variation in each class.

Classes.	Minimum.	First quartile.	Median.	Third quartile.	Maximum.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Academic	7.4	15.9	20.6	28.3	39.3
Scientific	11.5	22.1	24.6	27.4	34.9
General agriculture	3.9	20.8	27.2	31.0	43.2
Special agriculture	.0	9.6	12.3	15.9	23.2
Total agriculture	12.0	33.7	40.9	44.7	54.7
Elective	.0	8.2	12.9	17.6	51.3

These figures bring out very strikingly the great deviation from the average among the different colleges. It appears that some institutions must offer a course extremely weak in some types of work. However, too much should not be concluded merely from the extent of the variation. Usually the colleges which require a small amount of work of any one class allow considerable time for election, in which the additional work of this type may be taken.

It is probably true that, if a study were made of the records of electives actually taken in all the colleges, it would be found that in case a small amount of work is required in the special agriculture group the electives chosen would be largely in this class. This would also probably be true for the general agriculture group to a smaller degree. The same could be said to a lesser extent of the scientific group and would apply least in the case of the academic group.

Variations are still more striking in the work of the individual years. Of the 46 colleges for which the different years' work is represented (it is not given for the colleges of Arizona and Utah, since they have the group elective system), all require some academic work in the first year, all require scientific work, all but two some work in general agriculture, none special agriculture, and 3 elective. The variation is as follows:

	Range in per cent.
Academic	8.4 to 77.8
Scientific	5.9 to 58.8
General agriculture	.0 to 55.2
Elective	.0 to 30.0

The averages for the first year are, academic, 39.3; scientific, 35.1, general agriculture, 24.4; special agriculture, 0; and elective, 1.2. It is thus seen that the first two groups occupy approximately three-fourths of the first year's work.

Passing to the second year's work we find a dropping off of the academic, but an increase in the scientific, general agriculture, and elective groups. Also, special agriculture makes a small beginning. The averages are, academic, 19.9; scientific, 37.1; general agriculture, 35.9; special agriculture, 1.2; and elective, 5.9. All colleges require work of the scientific and general agriculture types, and all but one some academic work. Specialization begins in 4 colleges, and elective work is allowed in 15 of the 46.

The variations are still wide, as shown below:

	Range in per cent.
Academic	0.0 to 40.9
Scientific	10.6 to 61.5
General agriculture	6.2 to 68.4
Special agriculture	.0 to 25.0
Total agriculture	8.3 to 68.4
Elective	.0 to 40.0

The most striking change in the third year is the beginning of specialization. This group jumps to 21.5 per cent and elective work to 20.4. General agriculture falls off to 25.3, scientific to 17.3, and academic to 15.5. Most colleges retain some academic work, however, all but 10 requiring some of this type. Some work in the scientific group is required in all but 7 colleges. General agriculture subjects are required in all but 4, and specialized work in all but 10. Electives are offered in 39 out of the 46.

The variations are still greater this year, as is shown in the following table:

	Range in per cent.
Academic	0 to 48.6
Scientific	0 to 50.0
General agriculture	0 to 54.1
Special agriculture	0 to 38.9
Total agriculture	0 to 69.7
Elective	0 to 75.0

The last year shows a shrinking of the first three groups and an increase in the last two, the averages being: Academic 11.6, scientific 6.5, general agriculture 19.6, special agriculture 29.7, and elective 32.5. All but 12 require some academic work, only 25 scientific, all but 4 general agriculture, all but 4 special agriculture, and all but 6 allow some electives. In the four instances where there is no special agriculture group, specialization is of course made possible through the elective work.

The variations in this year are greater than in any previous year, as shown below:

	Range in per cent.
Academic	0 to 38.4
Scientific	0 to 40.0
General agriculture	0 to 48.0
Special agriculture	0 to 52.0
Total agriculture	0 to 100.0
Elective	0 to 100.0

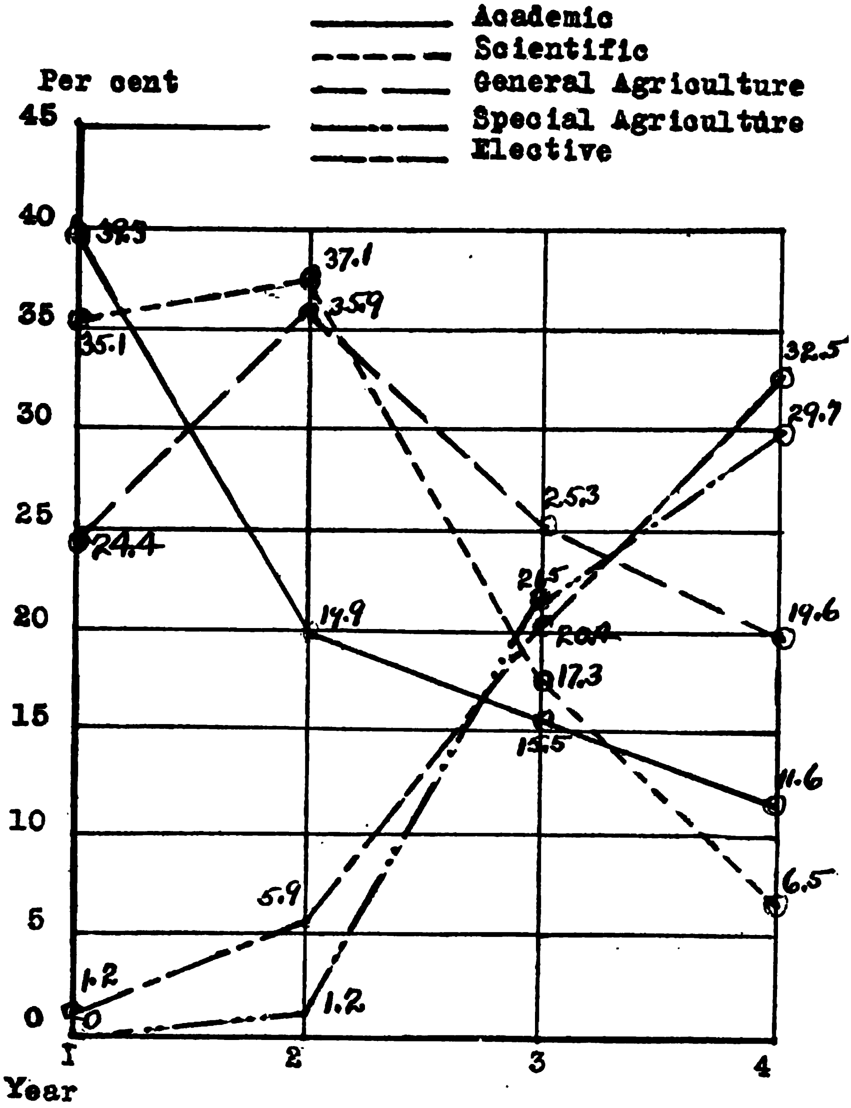

DIAGRAM 4.—*Variation of types of work throughout the four years.*

The tendencies of these five groups are shown in diagram 4. The academic falls steadily throughout the four years. Both the scientific and the general agriculture curves rise in the second year and fall through the third and fourth. Elective work begins in the first year at a low mark and special agriculture in the second year, and both rise steadily thoughout the remaining years of the course.

HOW MUCH FREEDOM OF ELECTION?

A study of diagram 6 gives an idea of the degree of freedom allowed in the election of work in the different colleges. As in the case of diagram 3, there is great variation, but certain general tendencies are apparent.

Considering the total course, the average for the 48 colleges is: Required, 59.7 per cent; prescribed elective, 28.1 per cent; and free elective, 12.2 per cent. It may be noticed that the elective group in the first classification does not always correspond with either the prescribed or free elective groups here, or with their sum. This is true because the two classifications were made on a different basis, as has been explained. For instance, optionals would be classed as prescribed electives, but might fall in one of the first four groups of the first classification, thus modifying the figures for the electives so that they would not correspond in the two classifications. The variation is as follows:

	Minimum.	First quartile.	Median.	Third quartile.	Maximum.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Required	0.0	50.0	62.1	71.2	84.8
Prescribed elective	.0	18.8	26.0	34.2	69.7
Free elective	.0	4.4	11.6	15.6	51.3
Total elective	15.2	28.3	37.9	50.0	100.0

There is only one college in which some work is not definitely required and only one not giving prescribed elective work. Eight colleges offer no free elective, limited freedom of choice being given through the prescribed elective.

In the first year most work is required, the amount of elective work being negligible. The percentages stand: Required, 96.6; prescribed elective, 2.4; and free elective, 1.0. All work is required in 37 of the 46 colleges considered. Prescribed elective work is given in 7 colleges and free elective in only 2. The variations are:

	Range in per cent.
Required	70 to 100
Prescribed elective	0 to 29
Free elective	0 to 30

In the second year the amount of both prescribed and free elective work increases, the averages being: required, 87.3; prescribed elective 8.6; and free elective 4.1. The variations are as follows:

	Range in per cent.
Required	26.5 to 100.0
Prescribed elective	.0 to 73.5
Free elective	.0 to 40.0

All of the 46 colleges include some required work, 15 offer prescribed elective, and 11 free elective.

The amount of required work drops off markedly in the third year, and prescribed electives take first place. The averages are: Required 38.7, prescribed elective 44.5, and free elective 16.8. All but 5 colleges, however, include some required work; all but 4 offer some prescribed elective, and all but 16 some free elective work.

The variations are as follows:

	Range in per cent.
Required	0 to 100
Prescribed elective	0 to 100
Free elective	0 to 75

Passing to the fourth year, a further falling off of required work and an increase in both prescribed and free elective is noticed. The percentage of required work becomes 16.3, while that of prescribed elective becomes 55.9 and of free elective 27.8. Twenty-five colleges, however, still include some required work. All but 3 have prescribed elective, and all but 12 some free elective. The variation is somewhat similar to that of the third year:

	Range in per cent.
Required	0 to 56.4
Prescribed elective	0 to 100.0
Free elective	0 to 91.4

Diagram 7, representing the tendency of these three groups through the four years, shows a consistent drop of the required curve through the four years, and a corresponding steady rise for the prescribed and free elective curves.

INFLUENCE OF GEOGRAPHICAL LOCATION ON BALANCE OF CURRICULUM.

While the variation found in the curricula of different colleges is certainly due in large part to the personal element—the individual opinions of the administrative officers of the institution, as well as other factors difficult to measure—there are at least two factors which are open to study, namely, geographical location and size of college.

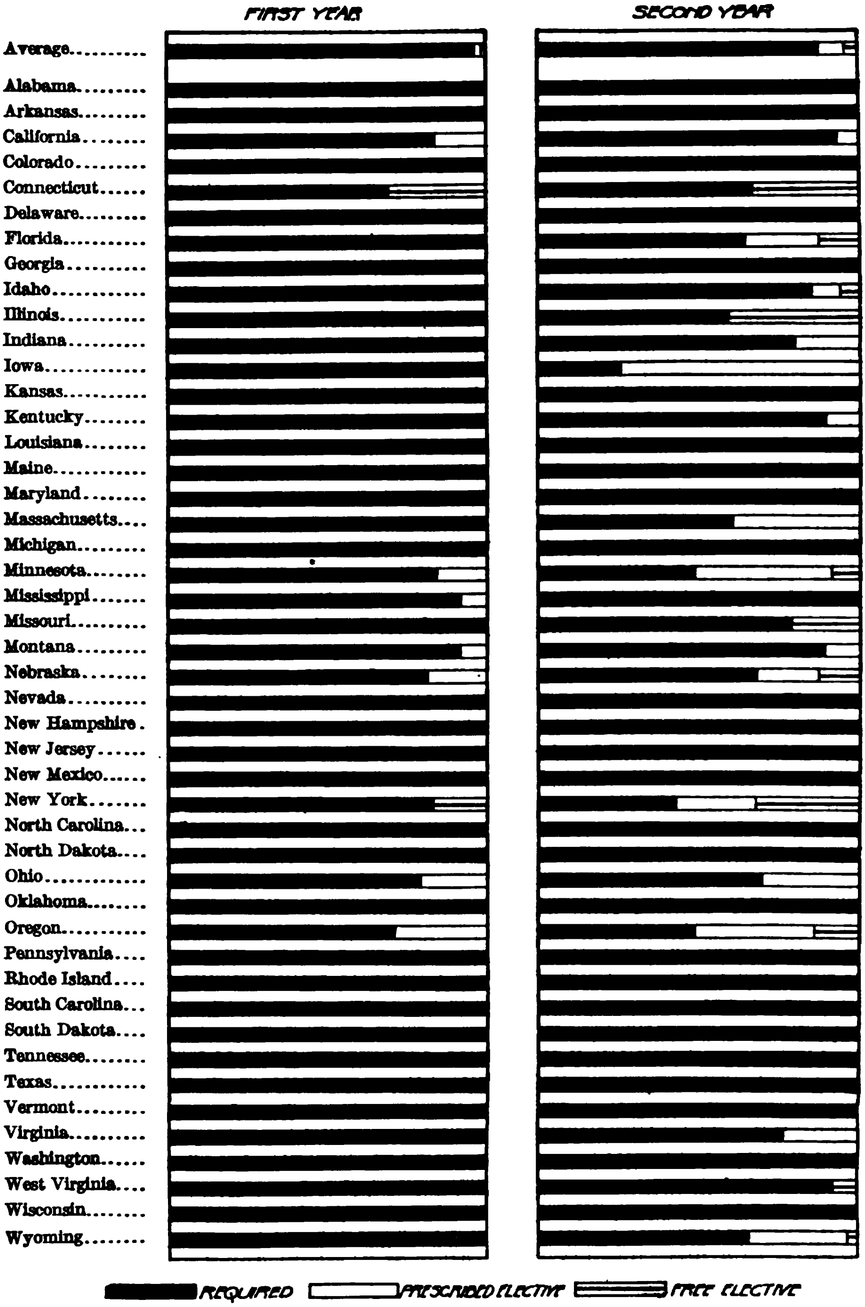

DIAGRAM 5.—*Distribution of required work in the colleges of agriculture, by years.*

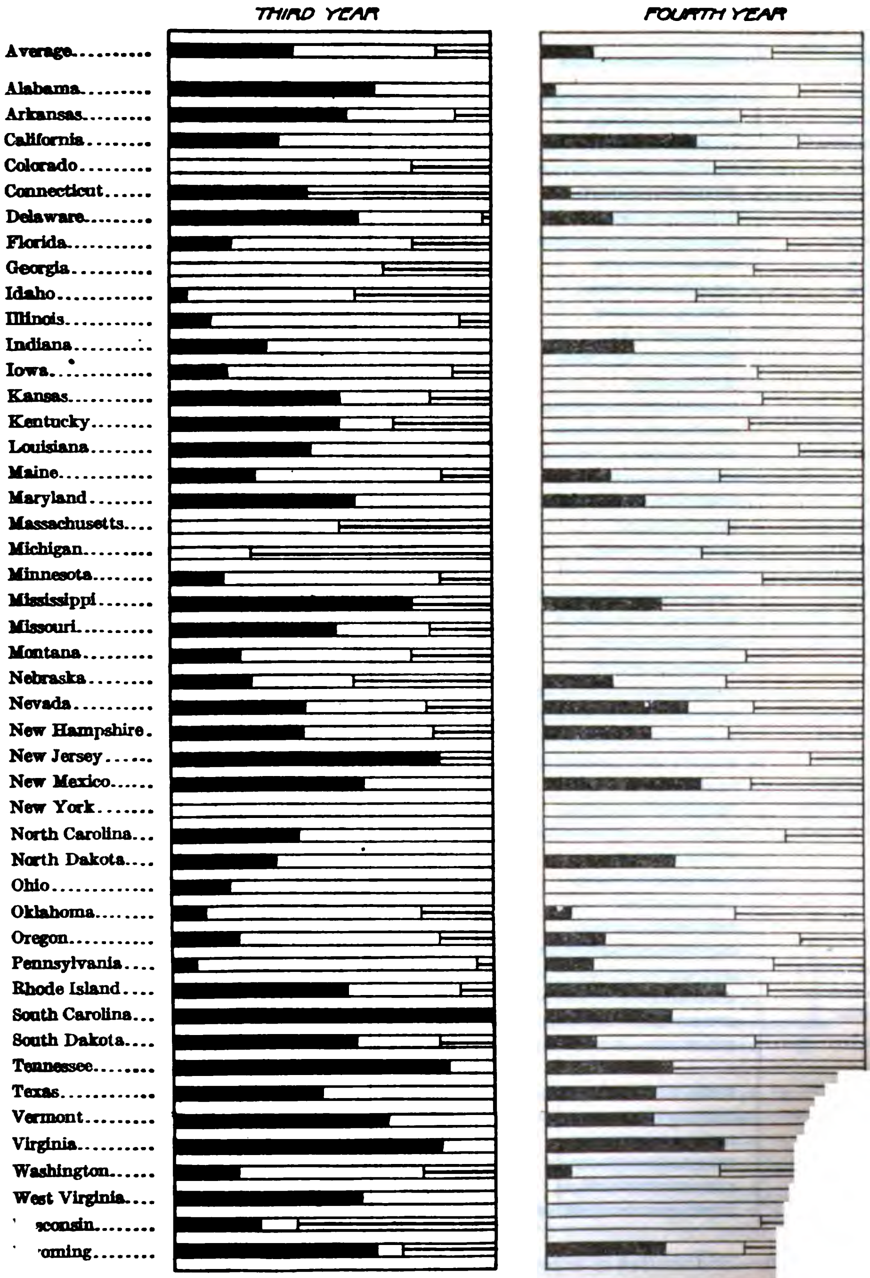

DIAGRAM 5.—*Distribution of required work in the colleges of agriculture, b*

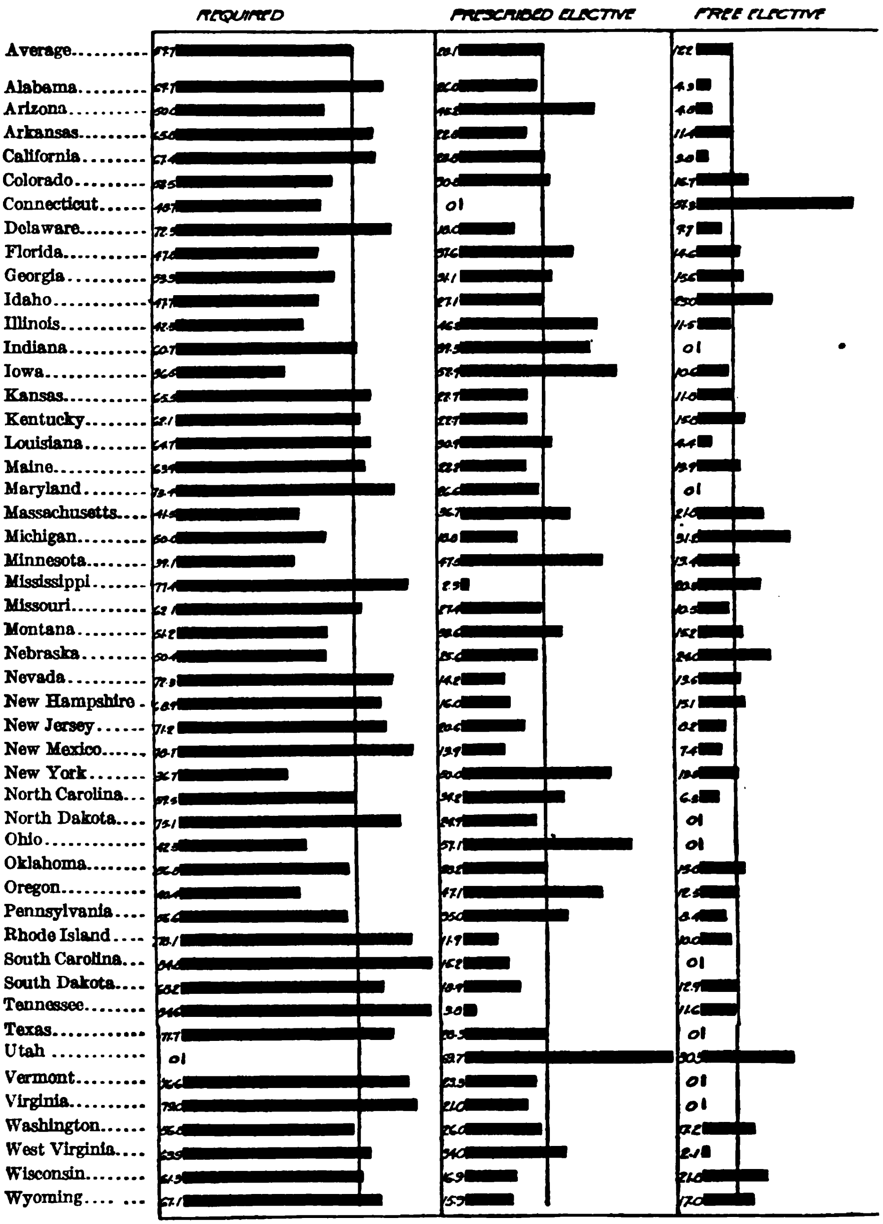

DIAGRAM 6.—*Distribution of required work in the colleges of agriculture, total course.*

To determine the influence of geographical location, if any, the averages for the total course in each college were grouped according to the common geographical division of States,[6] as shown in Table 7,

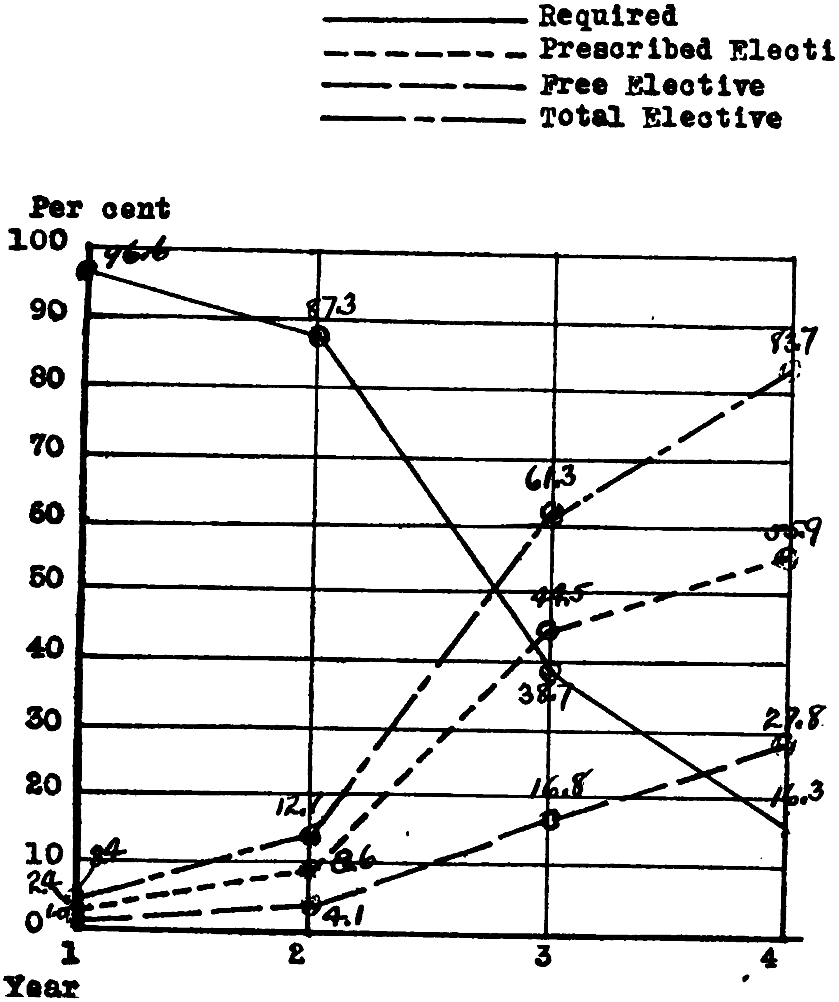

DIAGRAM 7.—*Variation in required work throughout the four years.*

and the averages determined for each geographical group. Data were not determined for each year, the figures for the total course being the important consideration here. The averages for both type of work and the freedom of choice are given together. The results are shown graphically in diagram 8.

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[6] New York was included in the New England group, since its climatic and topographic conditions more closely resemble those of this group than those of the Middle Atlantic States.

TABLE 7.—*Distribution of types of work in the curriculum according to geographical location.*

Geographical groups.	Academic.	Scientific.	General agriculture.	Special agriculture.	Total agriculture.	Elective.	Required.	Prescribed elective.	Free elective.	Total elective.
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
New England	25.2	21.3	22.0	12.1	34.1	19.4	59.2	22.9	17.9	40.8
Middle Atlantic	27.8	24.9	24.6	16.1	40.7	6.6	68.4	25.0	6.6	31.6
Southern	24.4	25.7	27.2	10.5	37.7	12.2	67.2	24.1	8.7	32.8
East Central	17.7	23.8	26.7	13.1	39.8	18.7	51.4	35.7	12.9	48.6
West Central	18.6	25.3	28.1	14.7	42.8	13.3	56.7	31.4	11.9	43.3
Mountain	16.2	25.9	27.9	11.9	39.8	18.1	52.5	31.3	16.2	47.5
Pacific	26.5	22.3	26.2	13.8	40.0	11.2	54.9	34.0	11.1	45.1
Average	22.0	24.5	26.4	12.5	38.9	14.6	59.7	28.1	12.2	40.3

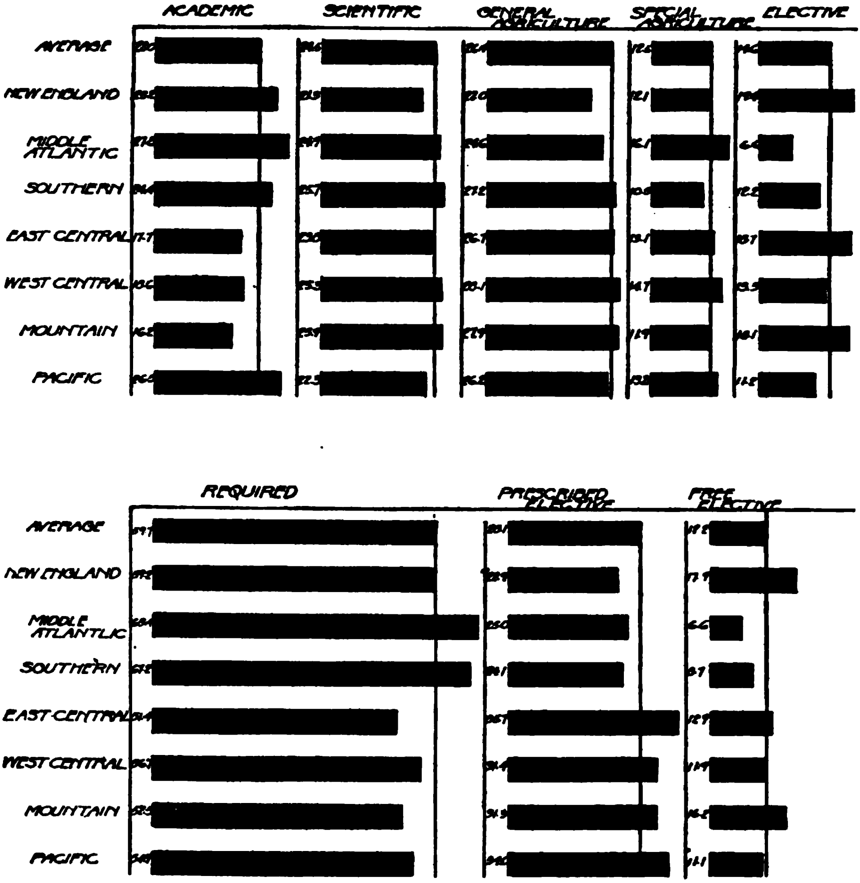

DIAGRAM. 8.—*Influence of geographical location on balance of curriculum.*

Some interesting tendencies are revealed here. In general, there is a falling off in academic work as we go from east to west. The only variations are a slight rise in the Middle Atlantic group over the New England group and an abrupt rise in the Pacific group. The figures for this last group, however, may not mean much, as the group contains only three colleges, not enough to furnish a fair average. The total variation in the academic class is from 16.2 to 27.8 per cent. There is remarkably little variation in the next three classes, showing that geographical location apparently has little effect on them. For the scientific class the range is only from 21.3 to 25.9 per cent, for general agriculture from 22 to 28.1 per cent, and special agriculture from 10.5 to 16.1. • The proportion of total agriculture is remarkably constant for all except the New England group, in which it is low, being largely offset by the large proportion of elective work. Barring this group, which has a proportion of 34.1 per cent of total agriculture, the variation among the groups is only from 37.7 to 42.8 per cent. The West Central group shows the highest proportion. The remarkable correspondence of the East Central, Mountain, and Pacific groups is noteworthy, the first two being 39.8 and the third 40 per cent. In the elective class a tendency corresponding to the academic is noted, only it is the converse. Barring the New England and Pacific groups, there is a general increase in the proportion of elective work from east to west. The total variation is from 6.6 to 19.4 per cent.

With respect to freedom of choice of studies, represented in the lower part of the diagram, there appears also to be a general tendency. With slight exception the proportion of required work falls off as we move westward. Of the prescribed elective work, a relatively low proportion is found in the New England, Middle Atlantic, and Southern groups, while that in the other four groups is considerably higher and very nearly the same for all groups. There is also a general tendency toward an increase in the proportion of free elective work in the westward trend, with the exception of the first and last groups. The range of variation is as follows:

	Range in per cent.
Required	51.4 to 68.4
Prescribed elective	22.9 to 35.7
Free elective	6.6 to 17.9

To summarize, the most striking influence of geographical location on the curriculum seems to be a decrease in the proportion of academic work and of required work, and a corresponding increase in the freedom of choice, as the location of the college changes from the eastern toward the western part of the country. The New England and southern groups are relatively low in the proportion of total agriculture, but the proportions for the other five groups are remarkably close, all being within a few units of 40 per cent.

INFLUENCE OF SIZE OF COLLEGE ON BALANCE OF CURRICULUM.

Contrasts are often drawn between the "small college" and the "large college," until many of us have grown to associate certain attributes with these types of institution. Are these generally accepted ideas founded on fact, or are they the result of unwarranted conclusions hastily drawn? It was to arrive at some of the fundamental differences between large and small colleges of agriculture that this phase of the data was studied.

The 48 colleges were divided into five classes, according to enrollment during the year 1917–18. This classification was based on enrollment figures furnished by the United States Bureau of Education, and represents the total number of students pursuing the four-year course in agriculture, regardless of enrollment in other departments of the college or university, or of short or special courses in agriculture. The following classification was adopted arbitrarily as representing what was thought to be suitable for this study:

Group No.	Students.	Colleges.
1	Less than 100	14
2	100–300	14
3	300–500	8
4	500–700	8
5	Over 700	4
Total		48

The averages for these groups were determined in the same manner as for the geographical groups, and are set forth in Table 8. The results are shown graphically in diagram 9. It so happened that the individual colleges fell into the different groups in such a way that the geographical factor became no longer effective. That is, each of the groups formed according to size includes institutions from a number of geographical groups, so that in this part of the study location is eliminated as a factor influencing the averages.

TABLE 8.—*Distribution of types of work in the curriculum according to size of college.*

Number of students.	Number of colleges.	Academic.	Scientific.	General agriculture.	Special agriculture.	Total agriculture.	Elective.	Required.	Prescribed elective.	Free elective.	Total elective.
		P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
Less than 100	14	20.5	25.4	30.3	11.9	42.2	11.9	67.8	23.2	9.0	32.1
100–300	14	21.9	25.7	23.4	11.3	34.7	17.7	57.5	26.7	15.8	42.5
300–500	8	26.3	23.0	25.1	13.2	38.3	12.4	61.3	27.6	11.1	38.7
500–700	8	22.9	23.1	26.4	11.9	38.3	15.7	57.2	32.7	10.1	42.8
Over 700	4	17.3	24.0	25.2	18.5	43.7	15.0	41.4	42.0	16.6	58.6
Average		22.0	24.5	26.4	12.5	38.9	14.6	59.7	28.1	12.2	40.3

A study of the data shows an increase in the proportion of academic work through groups 1 and 2 until the highest point is reached in the college of 300 to 500 students. There is then a decided dropping off as the size of the college increases. The total variation is from 17.3 to 26.3 per cent. The proportion of scientific work is remarkably constant, varying only from 23 to 25.7 per cent. It appears to be slightly larger in the two smaller groups. General agriculture stands highest in the smallest group, with 30.3 per cent, and lowest in the 100–300 student group, 23.4 per cent. It is very nearly the same in the other three groups, differing only 0.1 per cent in the third and fifth.

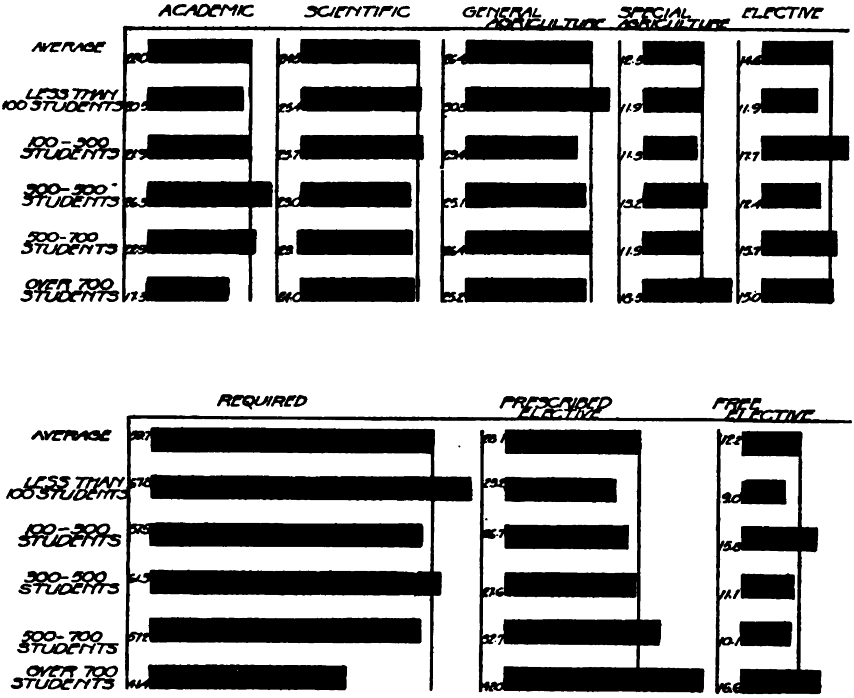

Diagram 9.—*Influence of size of college on balance of curriculum.*

The most striking fact about the special agriculture class is the greater degree of specialization in the group of largest colleges—18.5 per cent compared with 11.3 per cent in the 100–300 student group. The latter is very close to the proportion for the first and fourth groups, which is 11.9 per cent in both cases.

It is also interesting to note that in total agriculture the largest colleges provide the most, 43.7 per cent, but that the smallest are not far behind, with 42.2 per cent. The 300–500 and the 500–700 groups offer the same proportion of total agriculture, 38.3 per cent. The 100–300 group has the lowest average, 34.7 per cent.

A very decided tendency is shown with respect to the freedom of choice; the proportion of required work decreases with an increase in size. There is only a slight break in the curve representing this fall;

the third group shows slightly more required work than the second. Conversely, the proportion of prescribed elective increases without a break directly with the size of the college. With the exception of the second group, this tendency is shown also for the total elective work. The variations are:

	Range in per cent.
Required	41.4 to 67.8
Prescribed elective	23.2 to 42.0
Free elective	9.0 to 16.6

Summarizing the influence of size upon balance of curriculum, the available data indicate that (1) the medium-sized college requires the largest proportion of academic work, with the largest and smallest colleges requiring the least; (2) size has little influence on the proportion of scientific work; (3) the smallest colleges require the most general agriculture and the largest offer the greatest degree of specialization; (4) the proportion of total agriculture is highest in the largest colleges, and nearly as high in the group of smallest institutions; and (5) the proportion of required work varies inversely and elective directly with the size of the college.

BALANCE OF CURRICULUM IN SIX WELL-KNOWN AND REPRESENTATIVE AGRICULTURAL COLLEGES.

In studying the curriculum of any one college, we often resort to a comparison with some of the well-known colleges of high repute. There are, throughout the country, a number of agricultural colleges which have risen to positions of prominence as a result of able administration, adequate State support, liberal endowment, instruction of a high order, or other conditions. It was thought that a study of the balance of curricula in a small group of these well-known institutions would be interesting, and the colleges of the following States were chosen for this purpose: California, Illinois, Iowa, New York (Cornell), Minnesota, and Wisconsin. These were selected not with the idea that they are unquestionably the best six colleges in the country, but rather were picked from that larger somewhat indefinitely defined group of agricultural colleges generally accepted as being of high repute. The selection was made also with due regard for size and geographical location, in order that these factors may not influence results. It should be noted that four geographical groups and three of the size groups discussed in the preceding section are represented in these six colleges. Other colleges of equally good standing migh have been included, but for convenience the number was limited tc six. The averages for these are shown in Table 9 and diagram 8 For the sake of comparison, the averages for all 48 colleges are shown with them.

TABLE 9.—*Distribution of types of work in the curricula of six well-known agricultural colleges.*[1]

Colleges.	Academic.	Scientific.	General agriculture.	Special agriculture.	Total agriculture.	Elective.	Required.	Prescribed elective.	Free elective.	Total elective.
	Per ct.	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*
California	30.0	23.7	31.6	10.8	42.4	3.8	67.4	28.8	3.8	32.6
Illinois	18.5	24.6	30.0	15.4	45.4	11.5	42.3	46.2	11.5	57.7
Iowa	13.6	18.9	31.5	23.2	54.7	12.8	36.5	52.9	10.6	63.5
Minnesota	22.4	19.8	25.5	18.8	44.3	13.5	39.1	47.5	13.4	60.9
New York	28.3	26.7	20.8	20.0	40.8	4.2	36.7	50.0	13.3	63.3
Wisconsin	19.0	24.7	31.7	7.0	38.7	17.6	61.3	16.9	21.8	38.7
Average of above	22.0	23.0	28.5	15.9	44.4	10.6	47.2	40.4	12.4	52.8
Average of all 48 colleges	22.0	24.5	26.4	12.5	38.9	14.6	59.7	28.1	12.2	40.3

[1] According to announcements of courses for 1917-18.

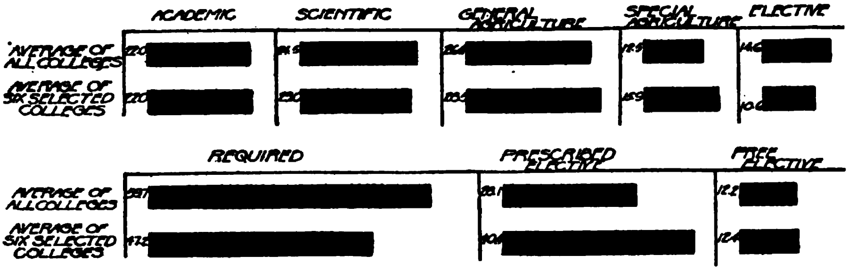

DIAGRAM 10.—*Balance of curriculum in six well-known agricultural colleges.*

Within this small group we find considerable variation. For instance, academic work ranges from 13.6 to 30 per cent, but the average, 22 per cent, is exactly the same as for the entire 48. Scientific work varies less, from 18.9 to 26.7, with an average of 23, about 1 per cent less than for the total number of colleges. Both general agriculture and special agriculture are higher for this group than the average for the country, making the total agriculture 44.4, as compared with 38.9 for all the 48 colleges, a very considerable difference. All but one of these colleges require over 40 per cent of total agriculture, the one falling below having the highest proportion of elective work. The proportion of elective work for the group is less than for the general average, 10.6, as compared with 14.6; and in the different colleges it varies greatly, ranging from 3.8 to 17.6 per cent.

The amount of required work varies from 36.5 to 67.4, averaging 47.2, which is more than 12 per cent lower than the average for the country. This difference is made up in the amount of prescribed elective work, which is 40.4 per cent, as compared with 28.1 per cent for all 48 colleges. The free elective work is practically the same in both cases, being 12.4 per cent for the six colleges considered and 12.2 for all colleges.

Thus a comparison of the averages for these six colleges with those of all 48 colleges brings out the following significant points:

(1) This group corresponds closely to the average for all 48 colleges in the proportion of academic and scientific work, and in the proportion of free elective.

(2) It is much below the average in the proportion of required work.

(3) It is considerably above the average in the proportion of both general and special agriculture, and hence of total agriculture.

What is the significance of these differences? Accepting for the moment the premises that these six colleges represent a step in advance over the average for the country, and that they more nearly approach the ideal than the average college, then we at once conclude that the average college requires about the proper amount of academic and scientific work, but that it should give more of both general and special agriculture. Also, it allows about the right amount of free elective work, but should give more prescribed elective and less required work. Of course we have no right to make these conclusions, for we can not be certain that the premises are correct. However, evidence in the form of opinion generally accepted by the public would substantiate these premises, and consequently the conclusions are worthy of consideration.

V. SPECIALIZATION.

In addition to the proportion of time that should be allowed for specialization, studied above as the "Special agriculture" type of work, there are other important phases of specialization. When should specialization begin? What is the best method of providing for it? To get some light on these questions the several curricula were studied from this viewpoint and Table 10 was prepared.

A glance at the first four columns of the table is convincing. Thirty-seven colleges, or over three-fourths, begin specialization in the third year, while 5 of the remainder start it in the second year and 6 in the fourth.[7]

It seems generally accepted that the junior year is the proper time for specialization to begin, and in view of this weight of opinion, for average conditions we are probably safe in drawing this conclusion.

Passing to the method of offering specialization, we find a greater diversity of opinion. For the purposes of this study, specialized work was classified in three groups: (1) The departmental group elective, (2) the major option, and (3) free elective.

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[7] In making this classification, merely the offering of elective work was not considered a beginning of specialization. However, if the offering of electives was clearly intended as a provision for beginning specialization, then specialization was considered as starting at this point.

TABLE 10.—*Summary of methods of specialization in the State colleges of agriculture.*

States.	Year when specialization begins.				Departmental group.	Major-minor option.	Free elective.
	First.	Second.	Third.	Fourth.			
Alabama				X	X		
Arizona			[1] X				[2] X
Arkansas			X		X		
California			X			X	
Colorado			X		X		
Connecticut		X					X
Delaware			X			X	
Florida			[1] X		X		
Georgia			X			X	
Idaho			X		X		
Illinois			X				[2] X
Indiana			X		X		
Iowa		X			X		
Kansas				[1] X		X	
Kentucky		[3] X					X
Louisiana			X				X
Maine			X		X		
Maryland			X		X		
Massachusetts			X			X	
Michigan			X		X		
Minnesota		X			X		
Mississippi				X			X
Missouri				[1] X			X
Montana			X		X		
Nebraska			X			X	
Nevada			X		X		
New Hampshire			X		X		
New Jersey				X		X	
New Mexico			X				X
New York			[3] X				[2] X
North Carolina			X		X		
North Dakota			X		X		
Ohio			X			X	
Oklahoma			X		X		
Oregon			X			X	
Pennsylvania			X		X		
Rhode Island			X				[2] X
South Carolina				X		X	
South Dakota			X		X		
Tennessee		X					X
Texas			X		X		
Utah			[1] X			X	
Vermont			X		X		
Virginia			[1] X		X		
Washington			X		X		
West Virginia			X			X	
Wisconsin			X			X	
Wyoming			X		X		
Total		5	37	6	24	13	11

[1] Mainly in this year; some begun in previous year.
[2] Free election limited to a certain degree by optional groups.
[3] Second term.

In the departmental group elective are included all curricula in which a sharp differentiation occurs at some point in the course, and the student elects a more or less definitely prescribed course (or "group" of studies) in some one department of the college. In this group most of the work is prescribed, but there is usually some free election provided, varying in the different colleges.

The major option comprises a choice of one main subject, known as a "major." The other subjects chosen in some colleges are designated as "minors." In some instances minor electives are prescribed as making suitable combinations with given majors, and the student elects the combination. In other cases considerable freedom is allowed in the choice of minors, but usually the combination of subjects is made with the advice and approval of the head of the department in which the major option is chosen.

In the free elective class we have placed the curricula in which still greater freedom of choice is allowed, no definite combinations being offered. It is true in practically all colleges, however, that elective subjects are chosen with the recommendation and approval of respective heads of departments or the dean. In many instances, also, there are certain limitations to the choice of electives; that is, it may be prescribed that a certain number of credits shall be taken from one or more of the different types of subjects, in order to preserve the balance of the curriculum.

There is such a variation within each of these methods in the different colleges that the three merge into each other. Thus, as the elective work increases in a departmental group elective, it becomes practically a major option. Likewise, as the restrictions applied to a major option are removed, we have the free elective.[8]

On this basis the 48 colleges were classified as shown in the second section of Table 10. The departmental group is the most popular, being found in one-half of the colleges. The major option and free elective have about an equal standing, with 13 and 11 colleges to their credit, respectively.[9]

The number of colleges offering a departmental group elective in each of the more important collegiate departments was determined in this connection. The following summary shows the departments in the 24 colleges offering this type of specialization in order from the greatest number to the smallest: Animal husbandry 23, agronomy 22, horticulture 20, dairy husbandry 15, agricultural education 11, general agriculture 6, poultry husbandry 6, agricultural chemistry 5, farm management 4, agricultural engineering 4, biology 4, entomology 3, soils 3, forestry 2, botany 2, and several others 1 each.

A number of other groups were recorded for one college each. In most instances they differ from those mentioned above chiefly in name and represent in general the lines of work covered in the list given. Animal husbandry, agronomy, horticulture, and dairy husbandry stand out as the more important groups, and would appear to have a place in most colleges. Agricultural education as shown here is of no special significance at this time, as the administration of teacher training in the colleges under the provisions of the Smith-Hughes Act has gone into effect since these curricula were published and has modified the whole aspect of the college course in agricultural education.

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[8] There is a somewhat definite type of specialization half-way between the major option and the fre elective. This has been termed the "optional group," but since it occurs in only a few instances, it was no considered of sufficient importance for a separate classification. We have placed such curricula in eithe the second or the third class, according as the case under consideration was more closely related to on or the other. This is the type of specialization in which the individual subjects are arranged in group and the student allowed to elect some credits, not less than a certain minimum, from each group. We ma include here also such free electives as are rather narrowly limited to given types of work; for exampl a certain number of credits from such types as agriculture, nonagriculture, science, etc.

[9] Four of the latter are of the "optional group" class.

At this point it may be of interest to note the large number of subjects that are included in the respective departmental groups, as shown in the lists on pages 31–37.

An examination of these lists indicates some significant facts: (1) Many highly specialized courses are being offered; (2) there is a great diversity of subjects, due probably to local conditions; (3) the course in agriculture apparently is being spread out to cover a wide field; (4) there is a lack of uniform terminology as applied to the respective courses.

INFLUENCE OF GEOGRAPHICAL LOCATION ON SPECIALIZATION.

In order to determine whether the factor of geographical location has any definite relation to the time specialization is begun or the method pursued, the colleges were classified by geographical groups and Table 11 prepared.

TABLE 11.—*Specialization as affected by geographical location.*

Geographical groups.	Year when specialization begins.			Departmental group.	Major-minor option.	Free elective.
	Second.	Third.	Fourth.			
New England	1	6	....	3	1	3
Middle Atlantic	....	3	1	2	2	....
Southern	2	9	3	7	3	4
East Central	....	5	....	2	2	1
West Central	2	3	2	4	2	1
Mountain	....	8	....	5	1	2
Pacific	....	3	....	1	2	....
Total	5	37	6	24	13	11

It appears that no sharp tendencies are shown. In three groups, East Central, Mountain, and Pacific, specialization begins in all colleges in the third year. The majority of colleges in all other groups begin specialization in this year, except in the West Central Group, where the time is distributed almost evenly among the second, third, and fourth years.

As to method of offering specialization, geographical location has no apparent influence.

INFLUENCE OF SIZE OF COLLEGE ON SPECIALIZATION.

What effect might the size of the college have on specialization? To throw some light on this aspect of the problem, Table 12 was prepared.

The tendency to begin specialization in the third year is carried out quite uniformly throughout these groups. The 100–300 group shows some considerable specialization in the sophomore year and the 500–700 group in the senior year.

The smallest three groups of colleges show a decided tendency toward the departmental group elective, while the 500–700 group favors the major option. The largest college group is equally divided between the departmental group and the free elective methods. Some free election occurs in all but the 300–500 group.

Table 12.—*Specialization as affected by size of college.*

Number of students.	Year when specialization begins.			Departmental group.	Major-minor option.	Free elective.
	Second.	Third.	Fourth.			
Less than 100		13	1	9	2	3
100–300	3	11		7	3	4
300–500	1	5	2	5	3	
500–700		5	3	1	5	2
Over 700	1	3		2		2
Total	5	37	6	24	13	11

These may be merely chance variations, and therefore have no special significance. However, there is probably a fundamental principle behind the variation with size. Apparently, the departmental group option is most satisfactory for the college having less than 500 students, while the major option system is most suitable for the college of from 500 to 700 students or probably larger. We should not be warranted in drawing conclusions from the "over 700" group, since it is too small to give fair averages.

SPECIALIZATION IN SIX WELL-KNOWN AND REPRESENTATIVE AGRICULTURAL COLLEGES.

Following out the idea taken up previously, the curricula of the six well-known colleges selected were studied with respect to these problems, as shown in Table 13. About the only definite thing to be concluded from the table is that the third year appears to be the most suitable time to begin specialization, four of the colleges beginning here to two in the second year. There is an equal division among the departmental group, major option, and free elective systems of specialization.

Table 13.—*Specialization as found in six well-known agricultural colleges.*[1]

Colleges.	Year when specialization begins.			Departmental group.	Major-minor option.	Free elective.
	Second.	Third.	Fourth.			
California		×			×	
Illinois		×				×
Iowa	×			×		
Minnesota	×			×		
New York		×				×
Wisconsin		×			×	
Total	2	4	0	2	2	[illegible]

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[1] According to announcements of courses for 1917–18.

VI. REQUIREMENTS IN PRACTICAL EXPERIENCE.

Perhaps the most generally recognized weakness of the average four-year course in agriculture is its failure to associate closely and accurately the college work with actual practice. It is the old problem of putting theory into practice. Agriculture is primarily an art, and it is impossible to master it fully without some practical experience. That this is true has been shown over and over in the man graduated from the agricultural course who has never had any practical work outside the laboratory. Such men can not expect to succeed in agricultural endeavor until they have acquired some experience. This has constituted a real problem for agricultural colleges, and in an effort to meet it, the generally accepted plan of farm-practice requirements has grown up. Some interesting data as to how the colleges are meeting this problem are shown in Table 14. The data were gleaned from the college catalogs and tabulated as accurately as possible, but they may be somewhat incomplete. First of all, a majority of the 48 colleges require some farm practice. No requirement in practice was found for 23 colleges, but by the present time more colleges may be requiring it.

There is some variation as to the amount required. Twelve colleges require 6 months, six require 3 months, three 1 year, and two 6 weeks. In one of these instances a full year is advised, while only 6 months are required. Of the two remaining colleges, in one the amount required is determined by the head of the department in which the student majors; in the other the student must show a sufficient degree of familiarity with ordinary farm practices.

The "when" of the farm practice is another important question. Three colleges advise that the requirement be met before matriculation. The greatest number, 11, require it any time before graduation. In six colleges it must be completed before the beginning of the senior year. The reason is obvious—a familiarity with practical methods is prerequisite to the best work of a special type, such as is usually pursued in the last year. In four colleges it is required before the junior year, and in two at any time during the four years of the course.

Only 3 of the 25 require that the work be taken under the direct supervision of the college. Nine of these, however, require that the work be done on an approved or accredited farm. In one or two instances this may be on the university farm, or under the direct supervision of the college.

Most of the colleges allow no academic credit for this practice work. Four colleges allow credit, two of them only for satisfactory work done in excess of the minimum requirement.

TABLE 14.—*Summary of requirements in farm practice in the State colleges of agriculture.*

State.	Practice required.		Amount.				Time.						Under supervision of college.		On approved or accredited farm.		Academic credit given.	
	Yes.	No.	6 weeks.	3 months.	6 months.	1 year.	Between second and third years.	Between third and fourth years.	Before third year.	Before fourth year.	Any time during college.	Any time before graduation.	Yes.	No.	Yes.	No.	Yes.	No.
Alabama		X																
Arizona	X			X						X				X		X		X
Arkansas		X																
California	X		X						X				X		X		X	
Colorado		X																
Connecticut	X			X								X		X		X		X
Delaware	X				X					X				X		X		X
Florida	X			X								X		X		X	[1] X	
Georgia		X																
Idaho	X			X							X			X	X			X
Illinois		X																
Indiana		X																
Iowa	X				X				X					X	X		[1] X	
Kansas		X																
Kentucky	X				[2] X					X				X		X		X
Louisiana		X																
Maine	[3] X											X		X		X		X
Maryland	X			[4] X			X	X						X		X		X
Massachusetts		X																
Michigan		X																
Minnesota	X				X							X		X	X			X
Mississippi		X																
Missouri	X					X						X		X		X		X
Montana	X				X							X		X		X		X
Nebraska		X																
Nevada		X																
New Hampshire	X				X							X		X		X		X
New Jersey		X																
New Mexico		X																
New York	X					X				X				X		X		X
North Carolina		X																
North Dakota	X				[5] X						X			X	X			X
Ohio	X					X			X					X		X		X
Oklahoma	X				X							X		X		X		X
Oregon	[6] X									X				X		X		X
Pennsylvania	X		X					X					X		X		X	
Rhode Island	X				X							X		X		X		X
South Carolina		X																
South Dakota		X																
Tennessee		X																
Texas		X																
Utah		X																
Vermont	X				X							X		X		X		X
Virginia		X																
Washington		X																
West Virginia	X			X					X				X		X			X
Wisconsin	X				X							X		X	X			X
Wyoming	X				X					X				X	X			X
Total	25	23	2	6	12	3	1	2	4	6	2	11	3	22	9	16	4	21

[1] In excess of minimum requirement.
[2] Two summers or one whole year.
[3] Must show satisfactory knowledge of practice.
[4] 16 weeks.
[5] If deficient in practice at matriculation.
[6] Amount to be determined by head of department.

It thus appears from these data that in general a requirement of farm practice is to be recommended. The largest number of colleges require a minimum of 6 months to be completed any time before graduation, either under the supervision of the college or on an accredited or approved farm. No credit is given in most of the colleges, but the student must satisfy the faculty that he has had sufficient experience to apply his college work satisfactorily.

INFLUENCE OF GEOGRAPHICAL LOCATION ON REQUIREMENTS IN PRACTICAL EXPERIENCE.

An effort was made to determine the relations of geographical location and size of college to the requirements in farm practice, and accordingly Tables 15 and 16 were prepared.

TABLE 15.—*Farm practice requirements as affected by geographical location.*

Geographical groups.	Practice required.		Amount.				Time.						Under supervision of college.		On approved or accredited farm.		Academic credit given.	
	Yes.	No.	6 weeks.	3 months.	6 months.	1 year.	Between second and third years.	Between third and fourth years.	Before junior year.	Before senior year.	Any time during college.	Any time before graduation.	Yes.	No.	Yes.	No.	Yes.	No.
New England	6	1	....	1	3	1	....	....	....	1	....	5	....	6	....	6	....	6
Middle Atlantic	3	1	1	1	1	....	1	2	....	1	....	....	1	2	1	2	1	2
Southern	4	10	....	2	2	....	....	....	1	1	....	2	1	3	1	3	1	3
East Central	2	3	....	....	1	1	....	....	1	....	....	1	....	2	1	1	....	2
West Central	4	3	....	....	3	1	....	....	1	....	1	2	....	4	3	1	1	3
Mountain	4	4	....	2	2	....	....	....	....	2	1	1	....	4	2	2	....	4
Pacific	2	1	1	....	....	....	....	....	1	1	....	....	1	1	1	1	1	1
Total	25	23	2	6	12	3	1	2	4	6	2	11	3	22	9	16	4	21

Some significant facts are brought out here. The New England and Middle Atlantic States lead in the farm practice requirements; there is a decided tendency to omit the requirement in the Southern States, while in all other groups about as many omit the requirement as include it. Apparently this is due to conditions peculiar to the different sections. In the New England and Middle Atlantic States a larger proportion of city-bred boys are enrolled in the colleges of agriculture, who have had no practical farm experience previous to matriculation. In the Central and Western States a much larger proportion of the students come from farms, and familiarity with farm practices is more general. In the Southern States the prevalence of Negro labor affects the situation.

The data do not show any special influence on the amount of practice required or the time when required. The only other variation worthy of note is that the tendency to require work on approved or accredited farms seems strongest in the West Central group.

INFLUENCE OF SIZE OF COLLEGE ON REQUIREMENTS IN PRACTICAL EXPERIENCE.

The relation of size to practice requirements is shown in Table 16. Again, one or two facts are outstanding. A larger proportion of small colleges require farm practice than of the larger ones, the most marked tendency being in the "less than 100" group. With 100 to 500 students only about two-fifths of the colleges make this requirement. Above this number practice is required by just one-half of the colleges.

This is difficult to explain. It is not due to geographical location, as there is no correlation between it and size. It may be merely a chance effect.

TABLE 16.—*Farm practice requirements as affected by size of college.*

Number of students.	Practice required.		Amount.				Time.						Under supervision of college.		On approved or accredited farm.		Academic credit given.	
	Yes.	No.	6 weeks.	3 months.	6 months.	1 year.	Between second and third years.	Between third and fourth years.	Before junior year.	Before senior year.	Any time during college.	Any time before graduation.	Yes.	No.	Yes.	No.	Yes.	No.
Less than 100	10	4	....	3	7	....	1	1	....	3	1	5	....	10	2	8	1	9
100-300	6	8	....	3	2	....	....	....	1	1	1	3	1	5	2	4	....	6
300-500	3	5	1	....	2	....	....	1	....	....	....	2	1	2	3	....	1	2
500-700	4	4	1	....	....	2	....	....	2	1	....	1	1	3	1	3	1	3
Over 700	2	2	....	....	1	1	....	....	1	1	....	....	....	2	1	1	1	1
Total	25	23	2	6	12	3	1	2	4	6	2	11	3	22	9	16	4	21

The rest of the data in the tables are so scattering as to be practically meaningless, except that apparently the size factor has no influence on the points considered. A possible exception is that the practice work required in all colleges of the 300–500 group must be on approved or accredited farms, but the number is too small to have much meaning.

REQUIREMENTS IN PRACTICAL EXPERIENCE IN SIX WELL-KNOWN COLLEGES.

What of the farm practice in the six well-known colleges under consideration? Table 17 shows that farm practice is required in five out of the six, a very significant fact. The time requirement is six months for three of them. In two of the number it must be completed before the beginning of the junior year, in one before the senior year, and in two at any time before graduation. The work is under the supervision of the college in only one instance, but is on accredited or approved farms in four. Credit is given in two instances.

TABLE 17.—*Farm practice requirements in six well-known agricultural colleges.*

Colleges.	Practice required.		Amount.				Time.						Under supervision of college.		On approved or accredited farm.		Academic credit given.	
	Yes.	No.	6 weeks.	3 months.	6 months.	1 year.	Between second and third years.	Between third and fourth years.	Before junior year.	Before senior year.	Any time during college.	Any time before graduation.	Yes.	No.	Yes.	No.	Yes.	No.
California	×	....	×	....	....	....	....	....	×	....	....	....	×	....	×	....	×	....
Illinois	....	×	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Iowa	×	....	....	....	×	....	....	....	×	....	....	....	....	×	×	....	×	....
Minnesota	×	....	....	....	×	....	....	....	....	....	....	×	....	×	×	....	....	×
New York	×	....	....	....	....	×	....	....	....	×	....	....	....	×	....	×	....	×
Wisconsin	×	....	....	....	×	....	....	....	....	....	....	×	....	×	×	....	....	×
Total	5	1	1	....	3	1	....	....	2	1	....	2	1	4	4	1	2	3

VII. MIDDLE COURSES IN AGRICULTURE.

It is not the purpose of this study to consider the curriculum of any but the four-year course in agriculture. Closely related with the four-year curriculum, however, is the problem of providing an agricultural training for persons who are unable to meet the entrance requirements for the four-year course, or for other reasons can not take such a course. The colleges are meeting this need by providing "short" and "middle" courses in agriculture for this class of applicants. The winter short course is not very closely related to the four-year course, but the "middle" course has much in common.

We find that 30 of the 48 colleges give these special or middle courses. The usual course of this type is a two-year course, 19 of the number being of this length. However, 5 are one-year courses, and 6 run for three years, each year's work consisting of a comparatively short period of about five months.

VIII. THE QUESTIONNAIRE STUDY.

In order to have the benefit of the best available opinion on the curriculum of the agricultural college, to supplement the study recorded above, the questionnaire following was sent to the deans of all the State colleges (except the New Jersey State College).

THE FOUR-YEAR COURSE IN THE COLLEGE OF AGRICULTURE. WHAT SHOULD THE COURSE COMPREHEND?

The College of Agriculture of the State of ....

Reported by ...., Dean.

April —, 1919.

I. In your opinion, what proportion of the credit of the four-year course in agriculture, based on semester hours, should be devoted to each of the following groups of subjects? (Write the percentage in the space opposite the name of each group.)
  (*a*) Academic (including language, history, social science, mathematics, physical training), per cent, ...
  (*b*) Scientific (all scientific topics except strictly applied agricultural science), per cent, ...
  (*c*) General agriculture (all agricultural topics except specialized lines covered in (*d*)), per cent, ...
  (*d*) Special agriculture (professional), per cent, ...
  (*e*) Free elective, per cent, ...
      Total, per cent, 100.

II. What proportion of the work should be:
  (*a*) Required work, per cent, ...
  (*b*) Prescribed elective, per cent, ...
  (*c*) Free elective, per cent, ...
      Total, per cent, 100.

III. Which of the following subjects do you believe should be *required* in a four-year course in agriculture, and in what year?

Subjects.	Should it be required? (Write "yes" or "no" opposite each.)	If so, in which year? (Write 1, 2, 3, 4 for 1st, 2d, 3d, or 4th years.)	If so, how many term-hours per week should be given to it?
1. English			
2. Public speaking			
3. Foreign language			
4. Algebra			
5. Solid geometry			
6. Trigonometry			
7. Physical training			
8. Military training			
9. History			
10. General economics			
11. Rural economics			
12. Rural sociology			
13. General chemistry			
14. Qualitative chemistry			
15. Quantitative chemistry			
16. Organic chemistry			
17. Botany (general, agricultural)			
18. Entomology			
19. Zoology			
20. Bacteriology			
21. Physics			
22. Soils and soil management			
23. Soil fertility			
24. Field crops			
25. Feeds and feeding			
26. Types and breeds of farm animals			
27. Live-stock management			
28. Dairy production			
29. Dairy manufactures			
30. Poultry husbandry			
31. Vegetable gardening			
32. Fruit growing			
33. Forestry			
34. Farm management			
35. Farm shopwork			
36. Farm machinery			
37. Drainage			
38. Research thesis			
Others			

IV. Specialization:
- *A.* When should specialization begin? Check one of the following:
  - 1. Second year, ... 2. Third year, ... 3. Fourth year, ...
- *B.* What is the best method of providing for specialization in advanced courses? Check one of the following:
  - 1. Selection of departmental group of prescribed subjects ....
  - 2. Choice of combination of "majors" and "minors" ....
  - 3. Free election of specialized subjects ....

V. Farm Practice:
- *A.* Should some practical farm experience be required for graduation? Yes, No. If so, what, should be the minimum?
  - 1. 3 months ....; 2. 6 months ....; 3. 1 year ....; 4. More than 1 year ....
- *B.* Should it be under the supervision of the college? Yes, No.
- *C.* When should it be required? (Check):
  - 1. Before entering college ....;
  - 2. Between 1st and 2d years ....;
  - 3. Between 2d and 3d years ....;
  - 4. Between 3d and 4th years ....;
  - 5. Any time before graduation ....;
  - 6. Any time during college course ....

VI. What should be expected of the college graduate?
- *A.* Check below what, in your opinion, the graduate of the four-year course in agriculture should be expected to do successfully:
  - 1. Superintend a large farming enterprise, without other training or experience than that required for graduation ....
  - 2. Conduct a farm as owner or share-tenant without other training or experience, etc......
  - 3. Act as a county agricultural agent, without other training or experience, etc., ...
  - 4. Act as extension specialist in his special field, without other training or experience etc. ....
  - 5. Have sole charge of some branch of a farming enterprise, such as an orchard, dairy herd, poultry flock, etc. ....
  - 6. Or should we not expect of the graduate more than the following without further training and experience? (Check):
    - (*a*) Assistant farm superintendent ....
    - (*b*) Assistant county agent ....
    - (*c*) Assistant extension specialist ....
    - (*d*) Commercial work related to agriculture ....
    - (*e*) Other types of work ....
- *B.* In what respects, if any, do you think the average agricultural college has failed in its effort to turn out trained men; in other words, what have been the weak spots in the average graduate's training? (Check):
  - 1. Deficiency in academic training ....
  - 2. Deficiency in training in fundamental sciences ....
  - 3. Incompleteness of training in general agricultural topics ....
  - 4. Failure to master any special branch of agriculture ....
  - 5. Lack of adequate farm experience ....
  - 6. Failure to develop high moral sense of responsibility to the service in which he is engaged ....
  - 7. Other points ....
- *C.* Should the graduate of the four-year course in agriculture be expected to qualify for agricultural research work calling for initiative and responsibility, without further training or experience? Yes, No.

VII. We shall appreciate it if you will amplify on the questions asked in VI. What, in your opinion, should be expected of the graduate of the agricultural college? In what respects has the college failed in its efforts to give adequate training? What changes would you suggest for improving the training now given? Also, additional comment on any of the above questions would be welcomed.

The questionnaires were sent the first part of April, 1919, and 35 replies were received. The deans of three colleges replied without answering the questionnaire directly, not caring to give their opinions in the form outlined. Most of the other 32 answered all questions; in a few instances answers to some questions were omitted. The results were summarized and are given on the pages following.

Whenever the summary of a point is represented by an average figure, only the actual number of answers is considered, not the total number of questionnaires returned. A comparison of the summary of the questionnaire with the data obtained from a study of the existing curricula is interesting.

BALANCE OF CURRICULUM.

Table 18 shows the balance of curriculum as expressed in the replies to the questionnaire compared with the averages compiled from the catalogues which have been discussed.

TABLE 18.—*Distribution of types of work—Existing curricula, compared with questionnaire replies.*

Types of work.	Average of 29 questionnaire replies.	Average of 48 colleges.	Difference.
Academic	17.7	22.0	−4.3
Scientific	27.2	24.5	+2.7
General agriculture	25.8	26.4	− .6
Special agriculture	16.7	12.5	+4.2
Total agriculture	42.5	38.9	+3.6
Elective	12.6	14.6	−2.0
Required	64.4	59.7	+5.7
Prescribed elective	23.6	28.1	−4.5
Free elective	12.0	12.2	− .2

There is considerable difference between the existing curricula and the combined opinion of the deans. The latter shows over 4 per cent less academic work, 2.7 per cent more scientific, 0.6 per cent less general agriculture, over 4 per cent more special agriculture, and 2 per cent less elective. Also, an increase of nearly 6 per cent in the required work is indicated, with 4.5 per cent less prescribed elective. The proportion of free elective is practically the same in each case. Summarizing, it appears that the consensus of opinion is in favor of less academic work, and more scientific and agricultural, and less freedom of choice of subjects.

SPECIALIZATION.

The opinion concerning specialization, compared with existing conditions, is shown in Table 19.

TABLE 19.—*Specialization—Existing curricula compared with questionnaire replies.*

Time and method.	Recommended in 32 replies to the questionnaire.	As found in 48 colleges.
Time to begin:		
Second year	3	5
Third year	27	37
Fourth year	2	6
Method:		
Departmental group	[1] 20	24
Major-minor option	8	13
Free elective	9	11

---

[1] The total in this column equals more than 32, because more than one method was recommended in some questionnaires.

The tendencies shown here correspond closely. While the number of colleges represented in the first column is only two-thirds the number in the second column, the distribution among the different groups is practically the same. The third year is decidedly the most favored for beginning specialization, and the departmental group is the most popular method. The free elective system and the major-minor system appear to be about equally popular.

FARM PRACTICE.

A decided opinion that farm practice should be required for graduation is expressed in the replies to the questionnaire. Of the 32 replies, only one was not in favor of requiring farm practice. This would indicate that there is a greater desire for farm practice than the colleges have been able to put into effect, as it is found to be required in only slightly over half of the colleges. The comparative figures are shown in Table 20.

TABLE 20.—*Farm practice—Existing curricula compared with questionnaire replies.*

Amount and time.	Recommended in 23 replies to the questionnaire.	As found in 48 colleges.
Required	31	25
Not required	1	23
Amount:		
Six weeks	....	2
Three months	4	6
Six months	13	12
One year	12	3
More than one year	1	....
Under supervision of college:		
Yes	19	3
No	12	22
Time—		
Before entering	7	....
Between first and second years	4	....
Between second and third years	5	1
Between third and fourth years	4	2
Before junior year	....	4
Before senior year	....	6
Any time during college	6	2
Any time before graduation	16	11

Six months is the most general requirement in both cases, but there is a stronger tendency to make it one year in the questionnaires.

There is a striking difference in the matter of college supervision of practice work. While in effect in few colleges, the majority of the answers are in favor of it.

As to the time the work should be required, there is general agreement, any time before graduation being most generally designated. The other items in this part of the table do not allow an accurate comparison, because of a difference in the method of tabulation and of wording the questionnaire. One point, however, is worthy of note. In six colleges it is required that the practice work be completed before the beginning of the fourth year, and in four colleges it comes before the third year. In five replies to the questionnaire, the period between the second and third years is designated, and in seven replies, before entering college. It seems certain that the earlier the work can be completed, the better it is for the student. Without question it should be completed before the beginning of the fourth year, in order to be of benefit in the advanced work of the last year. Where practicable, it should probably be acquired before the third year.

WHAT SUBJECTS SHOULD BE REQUIRED AND WHEN?

The opinion of the deans with respect to what subjects should be required, and when, is shown in Table 21. In some instances the year in which a subject should be required was not indicated, and accordingly only those indicating the place in the curriculum are included in the columns.

A comparison of this table with Table 4 shows a remarkable similarity with respect to position of subjects in the curriculum. With few exceptions, the subjects fall in the same year in both tables. Public speaking and general economics, appearing here in the third year, are second and fourth year subjects, respectively, in Table 4; but there is little other difference. The terminology used in the questionnaire does not correspond in all cases with that in Table 4; also many subjects are not listed, but the important ones are given, and the tables are comparable in essential respects. It may be noted that the total figure in the first column is often less than the sum of the yearly figures. This is due to the method of tabulation. In the replies to the questionnaire, more than one year was often given as suitable for a subject, and in such cases the subject was listed under both or all years given.

Some subjects have received unanimous indorsement in all replies to the questionnaires; most of those listed are included by the majority. Subjects indorsed in less than half of the questionnaires appear at the foot of the list for each year. In the first year, the less popular subjects are foreign language, algebra, and solid geometry; in the second year, forestry; third, history, live-stock management, dairy manufactures, and drainage; and fourth, research thesis. The evidence is against these subjects as requirements in the curriculum, but of course it is not proof that they should not be included more generally, or at least where local conditions would make it desirable. There seems to be a decided feeling that foreign language should not be required, much stronger than is evidenced by the curricula themselves.

What subjects should be required and when should they be given?

[Figures represent number recommending each subject.]

Year.	Total.	First year.	Second year.	Third year.	Fourth year.
FIRST YEAR.					
English	30	29	16	5	2
Trigonometry	15	11	......	......	......
Physical training	21	19	16	7	5
Military training	27	[1]27	[1]27	5	8
General chemistry	30	29	4	......	......
Botany	30	28	13	1	......
Types and breeds	28	20	12	2	1
Farm shop	19	14	6	2	1
Foreign language	3	3	2	......	......
Algebra	11	8	......	......	......
Solid geometry	6	6	......	......	......
SECOND YEAR.					
Qualitative chemistry	21	9	11	2	......
Quantitative chemistry	16	2	14	2	......
Organic chemistry	22	2	15	6	2
Zoology	25	[1]13	[1]13	1	......
Entomology	20	2	13	10	1
Physics	16	2	15	......	......
Soils and soil management	27	3	17	10	1
Field crops	28	13	17	8	......
Dairy production	22	10	15	8	4
Poultry husbandry	18	7	9	7	6
Vegetable gardening	20	7	16	4	1
Fruit growing	21	7	12	9	3
Farm machinery	21	4	9	6	3
Forestry	6	2	4	......	2
THIRD YEAR.					
Public speaking	18	4	6	7	4
General economics	20	......	4	14	5
Bacteriology	25	......	10	15	4
Soil fertility	18	1	5	10	2
Feeds and feeding	23	2	10	13	4
Live stock management	13	1	6	7	5
Drainage	10	2	3	4	3
Dairy manufactures	9	3	5	6	3
History	8	1	2	5	3
FOURTH YEAR.					
Rural economics	22	......	2	12	13
Rural sociology	18	......	......	8	14
Farm management	22	......	1	11	20
Research thesis	4	......	......	......	3

[1] Equal numbers place these subjects in first and second years.

WHAT TO EXPECT OF THE COLLEGE GRADUATE.

It was desired to learn the opinion of leaders in agricultural education as to what line of work the graduate of the agricultural college may be expected to pursue successfully, without other training or experience than that required for graduation. Accordingly, such a question was included in the questionnaire. A summary of the replies follows:

1. Superintendent of large farming enterprise, 2.
2. Operator of farm, 17.
3. County agricultural agent, 4.
4. Extension specialist, 3.
5. Have sole charge of some special branch of farming, 18.
6. Assistant farm superintendent, 23.
7. Assistant county agent, 25.
8. Assistant extension specialist, 22.
9. Commercial work related to agriculture, 23.

It is difficult to give definite answers to these questions, for so much depends on the personality of the individual and his previous experience. Young men of ability above the average, who were farm-reared, might be able to perform the first, third, and fourth types of work successfully on leaving college, but they are exceptions. A young man of moderate ability should succeed with the second enterprise, provided he has had ample farm experience. A city-bred man who had simply completed the minimum requirements in practice stipulated in most colleges would not be likely to succeed from the beginning in the operation of a farm unless he had unusual ability.

It appears to be quite generally accepted that the college graduate should begin in a subordinate place, for example, as an assistant in some agricultural endeavor, and here gain the necessary experience which would enable him shortly to assume a more responsible position. As expressed by the dean of one of the northeastern colleges, the graduate needs a year's experience for "hardening off."

To the question whether the graduate should be expected to qualify for agricultural research work calling for initiative and responsibility, 29 replies were "No" and only 1 "Yes."

WHAT ARE THE WEAKEST SPOTS IN A COLLEGE MAN'S TRAINING?

It is only natural that the agricultural college, in its rapid growth of recent years and in its effort to meet new conditions that have arisen, should not succeed in all cases to furnish a training of high grade in all respects. The replies to the set of questions concerning the "weakest spots" in a college man's training are significant. The summary follows:

1. Deficient in academic training, 18.
2. Deficient in scientific training, 16.
3. Incomplete training in general agriculture, 7.
4. Failure to allow sufficient specialization, 9.
5. Inadequate requirements in experience, 18.
6. Failure to develop sense of moral responsibility to profession, 14.
7. Faulty instruction, 3.

Inadequate academic and scientific training, lack of experience, and failure to develop a feeling of moral responsibility to the profession appear to be the chief points of weakness. The last mentioned has been so keenly felt in one institution that a course in agricultural relationships has been introduced to meet the need. All of these factors do not correspond with the replies to another part of the questionnaire. For example, in Table 18 we find that a reduction in the proportion of academic work is recommended, but here a weakness in this department is acknowledged. This may be due to a failure to appreciate the amount of time necessary for this work, or perhaps it is believed that this need should be met by better instruction in academic subjects rather than by devoting a greater amount of time to them. The need for an increase in scientific training and in farm practice is confirmed in both parts of the questionnaire.

There would probably have been more to designate faulty teaching as one of the chief reasons if this had been included in the check list in the questionnaire, as this was brought out many times in the general comment on the questions. In fact, this point of weakness is probably more generally recognized than any other. Various reasons were given: Inadequate training of instructors, insufficient time available to the instructor for preparing work and for study in keeping abreast with agricultural development, use of old and out-of-date textbooks, poor methods, inefficient use of time, especially in laboratory work. It was brought out that the sciences should be taught from the agricultural viewpoint, not by instructors who know nothing of and have no sympathy with agriculture. Another condition emphasized was the failure to apply the technical training, to tie up theory with practice, to bring classroom and field together. This undoubtedly is the chief reason for the almost unanimous recommendation that farm practice be required.

IX. BASIS FOR REORGANIZATION OF THE CURRICULUM.

From the present-day tendencies and that portion of the foremost opinion on the agricultural college curriculum presented above, we should be able to determine some of the fundamental principles upon which a curriculum should be based.

The aim of the agricultural course should be the first consideration. Even at this point of beginning there is some difference of opinion, but we are probably safe in assuming that the generally accepted aim is twofold, cultural and vocational. The college degree should stand for more than mere efficiency in one profession; it should mean a certain knowledge of the affairs of the world, an appreciation of the intricate relationships existing in the present stages of civilization, some insight in social and economic problems, and a broadened point of view which is essential to intelligent and useful citizenship. For this reason, the cultural aim must be kept in view. Along with this goes the vocational aim; the training for a profession, a means of livelihood. Sufficient attention should be given to this aim to develop an efficient worker, to give the student a foundation knowledge in his chosen field essential to successful endeavor.

Another factor which must be considered in the organization of any college curriculum is the previous preparation of the student, or, in other words, the college entrance requirements. The entrance requirements of the colleges were not taken up in this study, but the data should be interpreted with due allowance for this factor. A summary of entrance requirements of the agricultural colleges is given by Jarvis.[10]

Certain factors other than the curriculum are necessary to the successful administration of an agricultural course, such as (1) efficient instruction, (2) adequate equipment (field and laboratory), (3) adequate preparation of the student for college, (4) the intelligence and application of the student. However, as this paper is limited to a study of the curriculum *per se*, these will not be discussed in detail.

There is a great variation among the different colleges in the total number of semester hours required for graduation.

This was not taken up in the present study, for it has been summarized by Jarvis.[11] The total ranges from 124 to 228 hours, and the median requirement is 157 hours, somewhat less than 40 a year or 20 a semester. Variation in the method of equating laboratory hours in terms of credit hours is largely responsible for this difference. The most generally accepted method is to equate 2 laboratory hours as 1 credit hour. On this basis, 20 credit hours a semester, or 160 credit hours for graduation, probably represents a fair requirement.

The other fundamental factors may be summarized briefly. When both existing curricula and the opinions of the deans of the agricultural colleges are considered, the data indicate that the following represent the principles underlying the curriculum of the agricultural college. This summary does not represent an exact "average" of the catalog data and questionnaire answers, but due consideration in each instance is given to both.

1. The distribution of types of work should be about as follows: Academic, 21 per cent; scientific, 27 per cent; general agriculture, 26 per cent; special agriculture, 14 per cent; total agriculture, 40 per cent; elective, 12 per cent; total, 100 per cent.

2. The proportion of required work should be about as follows: Required, 62 per cent; prescribed elective, 26 per cent; free elective, 12 per cent.

3. The work of the first year should be predominantly of the academic and scientific types, forming a foundation for the advanced work in agriculture to follow.

4. Some academic work should be given each year in order to fulfill the cultural aim, and in order to develop a broad point of view within the student as he progresses toward the completion of his course.

5. Some work in agriculture should be given in the first year, in order to give the student the agricultural viewpoint as soon as

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[10] Jarvis, C. D. U. S. Dept. Int., Bur. Educ., Bul., 1918, No. 29, pp. 19–33.

[11] Ibid., p. 37.

possible, and should follow in increasing proportions throughout the four years.

6. All work in the first year should be required. Some election may be allowed in the second year, but most election should be left until the third and fourth years.

7. During the first and second years, courses covering the fundamental principles of agricultural science should be required, in order to form a basis for the technical training to follow.

8. Elementary courses in the main branches of agriculture should be required in the first two years in order to form a foundation for specialized study and to give the student a wide outlook on the field of agriculture and an unprejudiced view of its different phases, so that he may make his choice of special work intelligently.

9. Specialization should commence at the beginning of third year.

10. The best method of offering specialization is the "Departmental group," in which a student elects his special work by choosing a definitely outlined course of studies arranged to fit for the field in question with an allowance for a small amount of free election.

11. A minimum of six months of farm practice, completed before the fourth year, preferably before the third year, and better still before matriculation, should be required.

12. Certain subjects should be required in all curricula; others are desirable and in most cases should be included, but because of local conditions may be left out. These are indicated, respectively, as Groups A and B.

Group A.

First year:
- English.
- Physical or military training.
- General chemistry.
- Botany.
- Types and breeds of farm animals.

Second year:
- Public speaking.
- Zoology.
- Qualitative chemistry.
- Organic chemistry.
- Soils and soil management.
- Farm machinery.
- Dairy production.
- Poultry husbandry.
- Field crops.
- Fruit growing.

Third year:
- Bacteriology.
- Entomology.
- Economics.

Fourth year:
- Farm management.
- Rural economics.

Group B.

First year:
- Algebra.
- Trigonometry.
- Farm shop.

Second year:
- Physics.
- Vegetable gardening.

Third year:
- History.
- Feeds and feeding.
- Soil fertility

Fourth year:
- Rural sociology.

13. Foreign language should be required only of students who have not had at least two years in preparatory school and of those who are preparing for teaching or research.

14. The curriculum should be shaped to meet local conditions in the State and at the college.

This summary is given as epitomizing the data surveyed, and should be interpreted as such. It is fully appreciated that local conditions are usually the determining factor in formulating a curriculum, and that the differences of conditions governing different institutions make it impossible to apply any one hard and fast rule to all colleges alike. These principles, therefore, should be interpreted liberally, and should be considered as being of broad rather than specific application.

Neither should they be accepted as unqualifiedly constituting the "best" curriculum. Individuals will take exception to some of the points. They do not represent in all instances what the writer would favor. For example, he believes that the proportion of academic work should be somewhat increased and the elective reduced by a corresponding degree. In most other points, however, he is in virtual agreement.

X. HOW MEASURE THE EFFICIENCY OF A CURRICULUM?

The ultimate test of the efficiency of any curriculum is the quality of the product, the ability of the student graduated. Even this is not a fair test, however, for the personality of the student is an all-important factor; and other factors mentioned, such as the quality of instruction, equipment, etc., would influence the results. It is obviously desirable to have some other means of judging the efficiency of any given curriculum, most desirable before it is put into operation and "tried out" on an unfortunate group of students. The need for some method of measuring the efficiency of a curriculum became more apparent to the writer as he studied the curricula of different colleges, and discovered the great lack of uniformity among different institutions, and as it became apparent that the different colleges had evidently been shaping their curricula around different guiding principles.

The measure of efficiency heretofore applied has been the concept of the ideal curriculum in the mind of the individual as compared with the actual curriculum in question. This means that there have been as many different measures as there were individuals considering the problem, and so we have failed to reach any generally accepted standards.

In the effort to find a means of measuring the efficiency of a curriculum it seemed to the writer that the use of any definite unit of measure is impracticable The curriculum of any given college must be so adapted to local conditions that the "best" curriculum would probably not be the same for any two colleges. Granting, then, that a certain variation in the curricula of different State colleges is necessary in order to meet local conditions, the problem resolves itself into (1) singling out the factors which should be considered in making the adaptation, and (2) the provisions that shall be made in shaping the curriculum to meet them.

Some of the factors to which the curriculum of any one State college should be adapted are given here, being listed, in the opinion of the writer, in the order of their importance.

1. *The agricultural practices of the State.*—This is self-evident and needs no elaboration.

2. *The agricultural needs of the State.*—This factor should be considered in its broadest sense. It involves, first, a recognition of any weak features of the State's agriculture, as well as the agricultural resources and latent possibilities of the State and the lines of development that should be followed; and second, a recognition that professional leadership is necessary in carrying out any program of development. The college should aim to train its students for this leadership.

3. *The educational system of the State.*—Articulation with the secondary schools, of course, is necessary. Another point of contact is in the training of teachers and extension workers.

4. *The nature of the student clientage.*—The needs of the student, as determined by his previous training, farm experience, capacity, and aims, are varying factors, and certain tendencies predominate in particular States. These are of sufficient importance to be a determining factor in formulating a curriculum.

5. *The resources and facilities available for instruction purposes,* including such items as funds, faculty, and materials and equipment in field and in laboratory. The curriculum is often limited by a shortage or lack of any one of these.

6. *The organization of the college,* especially in relation to other divisions of higher education. For instance, the curriculum problem in the small college differs from that of the large university, where such questions as the offering of courses in other colleges (e. g., the college of liberal arts) must be considered.

While recognizing the need for variation, however, it should be possible to form a general judgment of the efficiency of any curriculum by comparing it with the standards which it has been the purpose of this study to discover. Assuming, then, that the courses are well taught, that the facilities of teaching are adequate, and that the student shows both ability and application, one may expect successful results if the curriculum measures up to the following table of standards. The so-called "normal" factors of items 2 to 5 represent the most generally accepted practices throughout the agricultural colleges of the country, modified by the epitomized opinion of the deans of these colleges. Item 1 is based on the study by Jarvis.[12] The factor of variation is covered by item 6.

This table of standards should not be regarded as permanent. It will necessarily change with the development of agricultural education. The growth of agricultural instruction in secondary schools is one of the movements which will have an important influence on the agricultural college, and it is generally predicted that with the universal establishment of vocational secondary agriculture, under the provisions of the Smith-Hughes Act, the chief aim of the agricultural college will gradually change from the training of farmers to the training of rural leaders and scientific experts. This, of course, will necessitate modifications in the curriculum, and any standards that may now be fixed would be subject to change.

STANDARDS OF THE CURRICULUM OF THE AGRICULTURAL COLLEGE.

1. Number of semester hours required for graduation—normal, 140 to 150, depending upon credit equivalents for laboratory work.
2. Balance of curriculum:
   A. Normal—Academic, 21 per cent; scientific, 27 per cent; general agriculture, 26 per cent; special agriculture, 14 per cent; elective, 12 per cent.
   B. Normal—Required, 62 per cent; prescribed elective, 26 per cent; free elective, 12 per cent.
3. Farm practice required for graduation: Normal, 6 months.
4. Specialization: Normal—Departmental group elective system commencing at beginning of third year.
5. Required courses:
   Normal—First-named subjects for each year required of all students in the year indicated. Those in parentheses desirable.
   First year.—English, physical or military training, general chemistry, botany, animal husbandry—basic course (algebra, trigonometry, farm shop).
   Second year.—Public speaking, zoology, qualitative chemistry, soils and soil management, farm machinery, dairy production, poultry husbandry, field crops, fruit growing, (physics, vegetable gardening).
   Third year.—Bacteriology, entomology, economics, (soil fertility, history, feeds and feeding).
   Fourth year.—Farm management, rural economics (rural sociology).
6. Adaptability to local conditions: Normal—The curriculum should be shaped with consideration for:
   1. The agricultural practices of the State.
   2. The agricultural needs of the State.
   3. The educational system of the State.
   4. The nature of the student clientage.
   5. The resources and facilities available for instruction purposes.
   6. The organization of the college.

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[12] U. S. Dept. Int., Bur. Educ., Bul. 29, 1918.

ADDENDA.

Shortly before this bulletin went to press there appeared a report of progress of the subcommittee on college instruction in agriculture, appointed in 1919 by the Commissioner of Education.[13] Several of the topics treated above are touched upon in this report. Closely in accord with the recommendations here set forth, the committee reports a growing opinion in favor of basic courses of agricultural subject matter early in the curriculum, departmental group electives beginning in the junior year, and an adjustment of the curriculum to the broader aspects of the agricultural problem rather than to meet special needs. The desirability of certain additional features is pointed out, including, among others, an advanced general course required in the senior year, which would present the production, economic and social problems of agriculture as a connected whole; and special training for the teachers of agriculture in the Smith-Hughes and other secondary schools, for extension workers and for agricultural journalists, providing a relatively large proportion of basic agricultural work in the course.

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[13] U. S. Dept. Int., Bur. of Ed., Higher Educ. Circ. 21, July, 1920.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 41

THE FRANCIS SCOTT KEY SCHOOL

LOCUST POINT, BALTIMORE, MARYLAND

By

CHARLES A. BENNETT

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

July 14. 1921
Harvard University,
Library of the Graduate School
of Education

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, September 13, 1920.

SIR: Some time ago the Commissioner of Education was requested by the principal of the Francis Scott Key School—the public school in that portion of the city of Baltimore known as Locust Point—by the board of education, and the mayor to advise in regard to the reorganization of the school to meet more effectively the needs of the children and the adult population of that section, and to suggest plans for a building to be so constructed as to adapt it to the use of the school so reorganized. In order to secure the data necessary as a basis for recommendations for the reorganization and for plans of building, and to make an intelligent presentation of the matter to the school board, Mr. Charles A. Bennett, of the Bradley Polytechnic Institute, of Peoria, Ill., was asked to make a careful study of the condition and needs of the people of that section of the city. The manuscript transmitted herewith contains a report of Mr. Bennett's study, together with recommendations for the reorganization of the school and the units which should be included in the new school building. Since this report will be helpful to the board of education in the city of Baltimore, not only in regard to that particular section of the city, but also in regard to other similar sections, and will also be helpful to boards of education in other cities, I recommend that it be published as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

THE FRANCIS SCOTT KEY SCHOOL,

LOCUST POINT, BALTIMORE, MARYLAND.

REPORT OF A STUDY OF THE SCHOOL AND LOCAL INDUSTRIES WITH REFERENCE TO THE ENRICHMENT OF THE SCHOOL CURRICULUM AND THE PLANNING OF A NEW SCHOOL BUILDING.

THE SPIRIT AND PURPOSE OF THE STUDY.[1]

This study of the Francis Scott Key School is an effort to break through the wall of school tradition and get a view of community educational needs unhampered. It does not ignore school experience or discount its value in solving new problems. On the contrary, it seeks to utilize such experience when it serves a purpose, but not to be blinded by it. The study endeavors to take school and community conditions as they exist at the present, estimate in what respects they may be expected to be different in the near future, and then work out a school organization plan and suggest a curriculum that will meet these conditions.

Part I.—CONDITIONS AT LOCUST POINT AFFECTING THE SCHOOL.

The conditions at Locust Point affecting the school and some inferences drawn from a knowledge of these conditions are as follows:

1. *Only about one-half of 1 per cent of the children of the Locust Point school ever go to a high school.* If this school has offered preparation for high school that is as good as a standard public elementary school, and there seems to be reason to believe that it has, then the fact that no pupils take advantage of this opportunity is of

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[1] The study was facilitated in every way possible by Miss Persis K. Miller, principal of the school. Her great desire for a school that will render a larger service to the children of the community, her open-minded attitude toward change, and her modern viewpoint have eliminated all of the ordinary school obstructions to such a study. In fact many of the elements in the reorganization of the school, as proposed in this report, were suggested by Miss Miller.

Assistance was rendered also by representatives of the industries. A large proportion of the factories on the Point were visited; also several in south Baltimore. Every person approached in the process of this study, whether officially connected with public education or the industries, or with neither, expressed a cordial interest in what was being done.

prime importance in determining the character of the school in the future. This fact suggests that in so far as the character of the school is affected by the aim to prepare pupils for the high school, this aim may be eliminated without perceptible loss in the efficiency of the school. It is quite possible, however, that, just as in the case of the Elementary Industrial School in Cleveland, Ohio, a student spending his upper grammar grade years in a school planned to meet the needs of life in an industrial community, without reference to the high school, would still be able to compete favorably in high-school work, if the opportunity to do so were to come to him, as it ought to come. There ought to be no royal or exclusive road to the high school.

2. *A large number of children, both boys and girls, leave school and go to work immediately on reaching their fourteenth birthday or very soon after.* The school law permits a child to receive a general employment certificate in the city of Baltimore as soon as he is 14 years of age, provided he has "completed the fifth grade or a course of study equivalent to five yearly grades in reading, spelling, writing, English language, and geography, and is familiar with the fundamental operations of arithmetic up to and including fractions."

The employment certificate records for the past four years, dating back by years from March 12, 1920, give the following results:

Employment certificate records for four years.

	1919-20	1918-19	1917-18	1916-17
To girls	24	17	45	28
To boys	40	36	59	55

This is an average for the four years of 28.5 for girls and 47.5 for boys.

The average for the past two years, however, is only 20.5 for girls and 38 for boys.

Approximately 27 per cent of the children in the sixth, seventh, eighth, and ungraded classes left school to go to work each year during the past two years. The Pathfinder Survey of 1914[2] states that of all the children at Locust Point, including those in the parochial schools, 50 per cent leave school by the end of the fifth grade, nearly 75 per cent leave before the end of the sixth grade, and that only 10 per cent complete the eighth grade.

The inference from these figures and from the statements of the teachers in the school is that children are taken out of school and put to work as soon as the law permits, and that most of these go to work in factories of some sort. In the interests of the children and of American ideals of education for citizenship something should be done to stop this leakage.

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[2] An unpublished report.

3. *The factories visited reveal the fact that most of the work-certificate children get jobs in which there is very little chance to learn a trade or to work up beyond a mere routine job.* When seen in the factories most of the boys were carrying something from one place to another—bottles from a machine to a furnace, bottles from a furnace to a box, blocks of wood from a saw to a truck, boards from a pile to a man at the saw, or making bundles of bags. Occasionally one was found running a simple machine.

The inference from these facts is that the industries are not the best places for most 14-year-old children. One employer at the Point said, "I am sorry for the boy every time I see a new one come into our factory." Another said, "No; there isn't much of a chance for a boy here"; and yet he expects to be able to use more boys in the near future, and no doubt he will get all he wants.

The Pathfinder Survey classified the industries in which children were found in 1912–13, but no attempt was made to analyze the jobs themselves. It stated, however, that, so far as was known, at that time no local industry provided systematic industrial training for the boys and girls in their employ.

4. *The environment of the children at Locust Point is far from being an ideal one*, and is likely to be worse in the future, when the industries occupy the open space they have in reserve. At the present time the children are surrounded by railroad tracks and high board fences; in a few years these tracks and high fences will crowd them into a much smaller space. At the present time the playground in Latrobe Park is the bright spot on a child's map of Locust Point. This should be supplemented by increased recreational facilities in the public school.

When one reads that at the time of the Pathfinder Survey, in 1914, the system of securing fuel very prevalent among the very poor families at the Point was to require the children to pick coal from the cars or wherever it could be found, and when one reads in the same survey that juvenile delinquency at the Point was about twice its proportion figured on the basis of the city's total population, he immediately concludes that the logical way to improve the general condition is to keep the children healthfully and educationally occupied under inspiring moral supervision for more hours every day, especially the older children. This can best be done by increasing the length of the school day for children above 13 years of age and by providing the right kind of facilities for industrial education and for wholesome recreation.

5. *There is a great lack of facilities for industrial training at Locust Point.* The Pathfinder Survey brought out the fact that at that time 61 per cent of the working force of men at the Point were employed in the industries at the Point, and by looking over the list of occupations of the remaining 39 per cent who are employed elsewhere it is clear that about 60 per cent of these are in what may appropriately be classed as industrial occupations. Thus it will appear that in 1914 approximately 84 per cent of the men workers living on the Point were engaged in the industries of Baltimore. While only 13 per cent of the working girls living on the Point were reported as employed in the industries of the Point, 80 per cent of the remaining 87 per cent, or 70 per cent, were in what may be regarded as industrial occupations. These added to the 13 per cent give 83 per cent of the working girls as engaged in industrial work. By the same process it appears that 78 per cent of the working boys of the Point were engaged in industrial occupations.

While these figures are not the facts exactly as they are to-day. they must be essentially as true to-day as six years ago. Yet it appears that nothing is being done in the industries and very little in the schools of the Point to provide industrial training. At the present time the seventh and eighth grade boys of the public school are given an opportunity to receive instruction in woodworking for one 2-hour period each week. This is so wholly inadequate in such a community that it need hardly be mentioned. There is really no opportunity for a boy in school to learn the fundamentals of the processes and technic of the typical local industries, and there is no opportunity at the Point for the boys and young men in the industries to supplement their limited schooling by the study of mathematics and applied science and drawing and citizenship. There are no cooperative part-time schools; there are no continuation schools; there are no evening trade classes.

Part II.—PROPOSED CHANGES IN THE SCHOOL.

In order to meet the conditions discussed in Part I of this report, the following changes are proposed in the Francis Scott Key School:

1. Place all children 13 years of age or older, except a few of the "ungraded," and all others who have reached the sixth grade, into a division of the school to be run under a departmental organization and having a curriculum in which industrial training and the right kind of physical training and recreation are given an equal place with other subjects. This might be called an intermediate school.

2. Organize cooperative part-time classes for such students as must leave school and go to work before graduation from the intermediate school.

3. Provide a one-year trade or vocational course following the eighth grade.

With these three established, facilities would also be provided for—

4. More industrial work for slow and subnormal students who are now classified as "ungraded."

5. Evening trade or vocational classes for young men and young women who are working in the industries and are desirous of improving their education.

Some of the considerations leading to these five recommendations and some of the details concerning their operation are given in the following:

DEPARTMENTAL ORGANIZATION.

A study of Tables 1, 2, 3, and 4 shows clearly (*a*) that a large number of both boys and girls leave school at the end of the fifth grade, when the law permits them to leave, provided they are 14 years old; (*b*) that there are a large number of children in the fourth and fifth grades and some in the second and third grades who are 13, 14, and even 15 years of age.

The first of these two observations is verified by Tables 5 and 6, showing the withdrawals to go to work. Table 7 shows that during the past two years the average drop between the fifth and sixth grades was from 106.5 to 57, or 46.5 per cent. From the fifth to the seventh it was 71.8 per cent, and from the fifth to the eighth 79.3 per cent.

If it were possible to make the school so attractive to the children and their parents—if they could be convinced that three years more of schooling is a good investment of time and money, as it has proven to be—the children who now appear in Tables 5 and 6 might be added to the number of students in attendance shown in Table 7. But this would not account for all the leakage, for by going over the employment certificates it was found that many drop out during the summer vacation.

In Table 8 these summer losses are accounted for. Comparing the average column in this table with the corresponding grades in the average column in Table 7, we see that instead of 57 in the sixth grade there ought to have been 75; instead of 30 in the seventh, there should have been 40; the eighth grade ought to have been increased from 22 to 37, and the ungraded class from 55 to 70. These average figures in Table 8 will serve as a help in estimating the possible number under the proposed new plan of organization.

In Table 9 are summarized and averaged the number of children, exclusive of the ungraded class, who are 13 years of age or older and below the sixth grade.

Table 10 shows what would be left of the elementary school under the present organization if the proposed new division or intermediate school were adopted.

Table 11 gives the number of classes or sections into which the pupils of the intermediate school would be divided.

The curriculum for this division of the school should cover all the essential parts of the regular work of the sixth, seventh, and eighth grades, with an additional amount of science, of industrial training, and of school-stimulated and supervised recreation. In general the course would include: (1) English; (2) mathematics; (3) history and social science; (4) physical science, including mechanism; (5) drawing, art, and music; (6) shopwork and homemaking; (7) health and recreation.

TABLE 1.—*Number and ages of boys in each grade, 1918–19.*

Grades.	Ages.											Total.
	5	6	7	8	9	10	11	12	13	14	15	
Kindergarten	15	12	1									28
Grade I	25	40	15	2	1							83
Grade II			6	17	17	15	2					57
Grade III				4	18	15	9	10	4		1	61
Grade IV					6	12	18	10	4	1		51
Grade V						3	13	9	12	10	2	49
Grade VI							5	14	9	5		33
Grade VII								3	9	3		15
Grade VIII									1	3		4
Ungraded class				1	2	3	6	9	6	9	4	40
Total by age	40	52	22	24	44	48	53	55	45	31	7	
Grand total												421

TABLE 2.—*Number and ages of boys in each grade, 1917–18.*

Grades.	Ages.											Total.
	5	6	7	8	9	10	11	12	13	14	15	
Kindergarten	14	14	1									29
Grade I	1	21	29	7	7	1						66
Grade II		5	18	17	15	10	3	1		1		70
Grade III				8	15	18	9	2				52
Grade IV					6	11	19	9	6	1		52
Grade V						4	10	22	12	6	1	55
Grade VI							8	9	14	1		32
Grade VII								4	6	3	1	14
Grade VIII									3	7	1	11
Ungraded class				1	3	6	7	7	10	7	2	43
Total by age	15	40	48	33	46	50	56	54	51	26	5	
Grand total												424

TABLE 3.—*Number and ages of girls in each grade, 1918–19.*

Grades.	Ages.												Total.
	5	6	7	8	9	10	11	12	13	14	15	16	
Kindergarten	11	5											16
Grade I	13	26	11	3	2								55
Grade II			8	30	13	10	2	2	1				66
Grade III				8	14	17	7	4	3		1		54
Grade IV					4	17	6	11	9	5			52
Grade V						5	17	13	16	7	2		60
Grade VI							6	13	3	1	3		26
Grade VII								1	6	1	1		9
Grade VIII									5	8	3	1	17
Ungraded class				2	3	1	1	2	4	1		1	15
Total by age	24	31	19	43	36	50	39	46	47	23	10	2	
Grand total													370

TABLE 4.—*Number and ages of girls in each grade, 1917–18.*

Grades.	Ages.											Total.
	5	6	7	8	9	10	11	12	13	14	15	
Kindergarten	5	11										16
Grade I	1	21	30	6	1	1						60
Grade II		1	15	19	13	5	3					56
Grade III				15	25	11	9	2	3			65
Grade IV					7	16	16	13	6	2		60
Grade V						11	16	13	7	2		49
Grade VI							3	9	6	5		23
Grade VII								5	12	5		22
Grade VIII									2	7	3	12
Ungraded class				1		2	3	2	4	1		13
Total by age	6	33	45	41	46	46	50	44	40	22	3	
Grand total												376

TABLE 5.—*Withdrawals of boys to go to work.*

Grades.	1918–19	1917–18
Grade VI	9	6
Grade VII	2	3
Grade VIII	1	
Ungraded class	9	9
Total	21	18

TABLE 6.—*Withdrawals of girls to go to work.*

Grades.	1918–19	1917–18
Grade IV	1	1
Grade V	1	3
Grade VI	4	5
Grade VII	4	3
Grade VIII	1	1
Ungraded class		1
Total	11	14

TABLE 7.—*Number of students in each grade.*

Grades.	1918-19			1917-18			Average of totals.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	
Kindergarten	28	16	44	29	16	45	44.5
Grade I	83	55	138	66	60	126	132
Grade II	57	66	123	70	56	126	124.5
Grade III	61	54	115	52	65	117	116
Grade IV	51	52	103	52	60	112	107.5
Grade V	49	60	109	55	49	104	106.5
Grade VI	33	26	59	32	23	55	57
Grade VII	15	9	24	14	22	36	30
Grade VIII	4	17	21	11	12	23	22
Ungraded class	40	15	55	43	13	56	55.5
Total	421	370	791	424	376	800	795.5

Shows loss of 46.5 per cent between grades V and VI, of 71.8 per cent between grades V and VII, of 79.3 per cent between grades V and VIII.

TABLE 8.—*Approximate number of students who would have been in upper grades if none had left to go to work.*

Grades.	1918-19			1917-18			Average of totals.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	
Grade VI	47	34	81	41	28	69	75
Grade VII	22	15	37	17	26	43	40
Grade VIII	15	29	44	14	16	30	37
Ungraded class	53	19	72	55	14	69	70.5

Made by adding figures in Tables 5 and 6 and Table 7, and work certificates granted during summer vacation.

TABLE 9.—*Number of students, exclusive of the ungraded class, 13 years of age or older who are below Grade VI.*[3]

	1918-19	1917-18	Average.
Boys	34	27	30.5
Girls	44	20	32

[3] Data taken from Tables 1, 2, 3, and 4.

TABLE 10.—*Number of rooms needed for classes in day school, not under departmental organization.*

[Source of data, Tables I to IV.]

Grades.	Number of pupils.	Number of rooms.
Kindergarten	44-45	2
Grade I	[4] 126-128	3
Grade II	[4] 122-125	3
Grade III	[4] 106-114	3
Grade IV	[4] 84-97	3
Grade V	[4] 59-76	2
Ungraded boys	40-43	2
Ungraded girls	13-15	1
Open air	....	2
Assembly Hall	....	1

[4] These figures exclude children 13 or more years old. It should be noticed, also, that they are based on total enrollment for the year, and therefore subject to some slight reduction when estimating room capacity needed at any specified time.

TABLE 11.—*Number of sections proposed under departmental organization in day school.*

Grades.	Number of pupils.	Source of data.	Number of section.
Over-age boys	— to 30	Table 9	2
Over-age girls	— to 32	Table 9	2
Grade VI, boys	32 to 47	Tables 7 and 8	2
Grade VI, girls	23 to 34	Tables 7 and 8	1
Grade VII, boys	14 to 22	Tables 7 and 8	1
Grade VII, girls	9 to 26	Tables 7 and 8	1
Grade VIII, boys	4 to 15	Tables 7 and 8	1
Grade VIII, girls	12 to 29	Tables 7 and 8	1
Part-time boys	....	Tables 5 and 6	1
Part-time girls	....	Tables 5 and 6	1
Grade IX (trade)	....	....	1

With the curriculum as above presented and the number of sections shown in Table 11 as a basis, the daily program for boys, Tables 12, 13, and 14, and others for girls, Tables 15, 16, and 17, have been worked out. These constitute a working program under the conditions stated, but each year the conditions would change somewhat. In consequence of this, the details of the program would change. There are certain fundamentals, however, that would not. The chief reasons for presenting the programs worked out in such detail is to prove the practicability of this plan of organization and the curriculum proposed, and especially to indicate the building space required for the proposed new division of the school under departmental organization.

In harmony with the previous statement, the new division of the school should occupy the time of the children more hours a day than the present school day. The proposed program begins at 8.30 and continues to 4.30, with one hour for luncheon.

Such an increase in the amount of time in school is sanctioned by recent writers who are advocating that the public school adjust itself to present social demands. The program provides two long periods—ordinarily called double periods—in the morning and two in the afternoon. Periods of about this length are essential in shopwork and all laboratory subjects, and have proven desirable in academic subjects. This is especially true where pupils do a large part of their studying at school and where teachers are expected to teach pupils how to study as well as listen to recitations and give explanations. In a school of the type under consideration it is especially desirable that the pupils be taught how to study and given time to study in school. It is not satisfactory to depend upon home study. This school study is accomplished by devoting the whole period to one subject—as arithmetic, or history, or English, for example—a part of the time being spent in study and a part in recitation. This plan has proven effective in experience. Where two subjects are assigned to one period in the tables, it should be understood that the subjects are both taught in that period during the week, but not both on the same day.

TABLE 12.—*Daily departmental program for classes of boys.*

Grades.	8.30-10.15	10.15-12	1-2.45	2.45-4.30
	First period.	Second period.	Third period.	Fourth period.
Over-age A	Shopwork.	English. Arithmetic.	Geography, Drawing.	Health and recreation.
Over-age B	English. Arithmetic.	Shopwork.	Drawing. Geography.	Health and recreation.
Grade VI A	Health and recreation.	Geography. Drawing.	Shopwork.	English. Arithmetic.
Grade VI B	Health and recreation.	Drawing. Geography.	English. Arithmetic.	Shopwork.
Grade VII	Shopwork.	Health and recreation.	English. Arithmetic.	Drawing. History.
Grade VIII	Mathematics. English. Social science.	Health and recreation.	Shopwork.	Drawing. Physical science.
Part-time	Drawing. Physical science.	Mathematics. English. Social science.	Health and recreation.	Shopwork.
Grade IX (trade)	Shopwork.	Shopwork.	Health and recreaation.	Mathematics. Physical science.

TABLE 13.—*Daily program for teachers of boys.*

Teachers.	First period.	Second period.	Third period.	Fourth Period.
Teacher, health and recreation.	VI A and B	VII and VIII	P. T. and Trade [5]	Oa A and B [6].
Teacher, shopwork	Oa A and B	Oa B		P. T.
Teacher, shopwork	Trade	Trade	VIII	
Teacher, shopwork	VII		VI A	VI B.
Teacher, drawing		VI A and B	Oa A and B	VII and VIII
Teacher, history, geography, and physical science.		VI A and B	Oa A and B	VII and VIII.
Teacher. English, and arithmetic.	Oa B	Oa A	VI B	
Teacher, mathematics, English, and social science.	VIII	P. T.	VII	VI A.
Director, industrial work.	P. T. (drawing and physical science).			Trade (mathematics, drawing, and physical science).

[5] The part-time and trade classes; see Table 12. [6] The over-age A and B classes; see Table 12.

TABLE 14.—*Daily program of rooms for classes of boys.*

Rooms.	First period.	Second period.	Third period.	Fourth period.
Gymnasium	VI A and B	VII and VIII	P. T. and Trade	Oa A and B.[7]
Health classroom [8]				
Shower baths [9]				
Shop	Oa A	Oa B		P. T.
Shop	Trade	Trade	VIII	
Shop	VII		VI A	VI B.
Drawing	P. T. (2 days)	VI A and B	Oa A and B	VII and VIII.
Laboratory, physical science.	P. T. (3 days)	VI A and B	Oa A and B	VIII, Trade, and physical science.
Classroom [10]	Oa B	Oa A	VI B	VII, History, Trade, Mathematics.
Classroom [10]	VIII	P. T	VII	VI A.

[7] The over-age A and B classes; see Table 12.

[8] To be free for use whenever needed by teachers of health.

[9] To be free for use whenever needed.

[10] Both classrooms to be equipped with tables suitable for classes in elementary drawing or blue-print reading.

Another advantage in this long period is that if the same teacher gives the instruction in both subjects assigned to the hour, he can divide the time occasionally, if it seems best to do so. For instance, if he teaches English and arithmetic, he might on a given day devote one-fourth of the period to some small section of one subject and three-fourths to the other subject. Or if a given student needed to study one subject much more than the other the adjustment could be made in the study part of the period. Even when both subjects are not taught by the same teacher adjustments of time can be made between the teachers for special purposes without interfering with the daily schedule of any other group of students. In other words, the plan allows for a large measure of adjustability within a perfectly organized program.

No attempt has been made to work out the details of the program in health and recreation. The space assigned it indicates its relative value. It is intended to include physiology, hygiene, first aid, "safety first," physical education, athletics, and games, both indoors and outdoors. It is believed that the amount of time assigned to it is fully justifiable when the out-of-school environment of the children at Locust Point is considered.

It should be noticed in Table 13 that the director of industrial work is assigned for two periods only. He will need the remainder of his time for supervision, and especially to visit the factories where part-time students are at work, for he should become the coordinator between the school and the industry. This is very important. He must see that his boys give reasonable service and receive proper treatment. Also he is the logical person to be the vocational adviser of this group.

TABLE 15.—*Daily departmental program for classes of girls.*

Classes.	8.30-10.15	10.15-12	1-2.45	2.45-4.30
	First period.	Second period.	Third period.	Fourth period.
Over-age C	Home making.	English. Arithmetic.	Geography. Art.	Health and recreation.
Over-age D	English Arithmetic.	Home making.	Art. Geography.	Health and recreation.
Grade VI	Health and recreation.	Geography. Art.	Home making.	English. Arithmetic.
Grade VII	Health and recreation.	Art and history.	English. Arithmetic.	Home making.
Grade VIII	Home making.	Health and recreation.	English. Mathematics. Social science.	Art. Physical science.
Part-time	Art. Physical science.	Home making or trade.	Health and recreation.	English. Social science.
Grade IX (trade)	Trade or home making.	Trade or home making.	Health and recreation.	English. Social science.

TABLE 16.—*Daily program for teachers of girls.*

Teachers.	First period.	Second period.	Third period.	Fourth period.
Teacher, health and recreation.	VI and VII	VIII	(P. T. and trade)	Oa C and D.
Director, home making.	VIII and trade	P. T. trade		VII.
Teacher, home making.	Oa C	Oa D	VI	
Teacher, art	P. T. (3 ds.)	VI-VII	Oa C and D	VIII (2 ds.).
Teacher, history, geography, and physical science.	P. T. (2 ds.)	VI-VII	Oa C and D	VIII (3 ds.).
Teacher, English and arithmetic.	Oa D	Oa C	VII	(VI.).
Teacher, mathematics, English, social science.		P. T	VIII	Trade, and P. T.
Teacher, trade	Trade and VIII	Trade		P. T. and trade.

TABLE 17.—*Daily program of rooms for classes of girls.*

Rooms.	First period.	Second period.	Third period.	Fourth period.
Gymnasium	VI and VII	VIII	P. T. and trade	Oa C and D.
Household art	Oa C	Oa D	VI	
Household science	VIII (trade)	P. T. (trade)		VII.
Art	P. T. (3 ds.)	VI and VII	Oa C and D	VIII (2 ds.).
Laboratory, physical science.	P. T. (2 ds.)	VI and VII	Oa C and D	VIII (3 ds.).
Trade	Trade (VIII)	Trade		P. T. (trade).
Classroom	Oa D	Oa C	VI	(VI).
Do		P. T	VIII	Trade and P. T.
Laundry [11]				

[11] For use of home-making classes when needed.

No teacher should be assigned to classes for more than three of these long periods per day. This is the same as the customary assignment for six periods in many secondary schools. It will therefore be seen that the program of the teacher of mathematics, English, and social science, Table 13, is too heavy for one teacher. The part-time class should be taken out of his program. There are two cases of this kind in Table 16. It is safe to leave these for adjustment, because Tables 14 and 17 indicate that a sufficient number of rooms for all of the classes have been provided.

The purpose in presenting so many tables has not been to attempt to fix minor details of curriculum and program, but to indicate certain governing principles, to demonstrate the practicability of the plan, and to determine the number of rooms and the kind of working space that should be provided.

From the above it will be seen that one of the greatest advantages of the intermediate school, as above outlined, is the enriched curriculum, with its stronger appeal to the interests of the children. A second advantage is that with the long periods it eliminates rushing from one subject to another without time for concentration of thought on any one. A third advantage is that it insures study under favorable conditions. A fourth advantage is that promotion is by subject instead of by grade, which is a tremendous encouragement to certain pupils who become discouraged and drop out or drop behind under the customary class organization plan for these grades. It helps these pupils to find out what they are best fitted to do. It becomes a practical means of educational and vocational guidance.

COOPERATIVE PART-TIME CLASSES.

It is assumed that the best general education that a public school can reasonably offer for the normal children of Locust Point would come through the all-day courses as outlined above. It is realized, however, that even if such schooling were offered some children would still be taken out of school as soon as the law permits and sent to work in the factories. For this reason cooperative part-time classes should be organized. Under this plan students would alternate between the school and the factories by weeks or by two weeks' periods. Two boys would be employed on a given job in a factory; one would work the first week while the other went to school; the second week they would exchange places. This would insure a worker continuously in the factory and enable both of the boys to continue their schooling. The same plan would apply to girls. The present attitude of the employers at the Point seems to be sympathetic toward a scheme of this kind. One said he would be interested in cooperating in such a scheme if he were in need of boys. Another said it would be a matter of organization to be worked out; he needs more boys. Another saw no serious objection to it. Still another said, " You are on the right track."

From the standpoint of educational policy the objection may be raised that the occupations into which boys of the 14-to-16-year-old period go are for the most part routine jobs. This is true, but it is also equally true that the children are in these jobs and will continue to be in them. The real question is, Shall they be in them with or without the parallel schooling? There ought to be but one answer to this question: They should have the schooling. When the full benefit of some schooling along with work is realized fully the State of Maryland will follow the lead of other industrial States and of England, and will pass a law requiring attendance in a continuation school for at least a small part of each week up to 17 or 18 years of age. Until such time comes, and probably afterwards also, a cooperative part-time scheme is best for the pupil and for the employer.

While one deprecates the fact that 14-year-old children work in routine jobs, there are a few good things that some factories do for some boys that neither their parents nor the school have done for them. If a boy continues at the factory job he learns to work when he would prefer to play; he learns to obey orders promptly; he begins to appreciate the value of money; he becomes aware that efficiency brings higher rewards than inefficiency. For some boys these are about the most important lessons they can learn. Moreover, there are certain children who should be definitely educated for routine jobs, because in these jobs only will they ever become self-supporting citizens.

The larger view to take of the part-time plan is that it provides education for American citizenship and a richer life to those who otherwise would not get it.

Where a boy's work is of such a character that he is learning a first-class trade, the part-time plan becomes one of the most effective types of vocational education. The best that can be done at the Locust Point schools is for the coordinator to seek out the best opportunities for his boys who must go to work, taking their individual possibilities and limitations into consideration and advise them in reference to their changes from one job to another.

In the program for part-time work, Tables 12 to 17, space for only one section of boys and one of girls is allowed, yet it is intended that the part-time work should cover two years. It is believed that when the time comes that more than two sections of part-time students are required there will be a falling off in some other section of the school, thus allowing space for the extra part-time class. The present estimate does not contemplate any large increase in the total number of students in the school, owing to the very limited additional space on the Point available for homes. If this were not the case the number of sections for part-time work should be doubled in planning sufficient space in the new building. If, as is possible, the starting of the part-time plan at the Locust Point school brings students from south Baltimore, there is a possibility that the school might be crowded to provide space for all its part-time students.

THE ONE-YEAR TRADE COURSE.

The all-day trade school has proven a success in several public-school systems; Buffalo, N. Y., is a notable example. The trade courses are usually two or more years in length. On the other hand, some very effective one-year courses have been given.

It is believed that at the Locust Point school a one-year trade course could be made very effective if built upon the kind of course proposed for the sixth, seventh, and eighth grades. The trade course would then be the rounding out or finishing off of the student to enter the trade of his choice. While it would not make him an expert trade worker it would, by combining theoretical and practical instruction, make him an unusually promising beginner at the trade. He would at least be equivalent to an advanced apprentice at the start, and in a few years ought to be far superior to the average apprentice because of his theoretical knowledge. It is to these trade-school graduates, after they have had practical experience, that the industry will look for men to develop into positions of responsibility in the industry.

Moreover, the proposed one-year trade course is a practical means of prolonging the education of such graduates of the eighth grade as determine to enter trades in which the school can offer special preparation. During the trade-class year each boy would spend half his time in the shopwork of a single trade, whereas in the previous years he would have elementary experience in all the kinds of shopwork the school could offer. The same principles would apply in the trade work for girls. Concerning all-day trade courses for girls, Miss Cleo Murtland has recently said, in a very important report on vocational training for women in industry:

> Vocational education for all prospective workers should be assured in all-day vocational courses before entering wage earning, or in part-time courses which supplement occupational experience, and prepare for promotion. While the all-day vocational school or department in most communities serves fewer students than part-time and evening courses, it has been shown that all-day courses tend to lengthen the school attendance of girls contemplating wage earning, and that vocational preparation tends to create a demand for further trade training and education in part-time or evening trade-extension courses.[13]

Concerning the particular trade courses to be offered, it is recommended that some one metal-working trade be selected for boys and some needle trade for girls. It is probable that with the right kind of teaching staff two or three allied trades could be taught. The theoretical instruction in mathematics and science could then be the same for all, but the practical shopwork would differ.

These trade courses would come under the provisions of the Federal vocational education law, and would, therefore, be subject to partial support by the Federal Government.

INDUSTRIAL WORK FOR SUBNORMAL CHILDREN.

The Locust Point school is extremely fortunate in having the interest and practical cooperation of the Phipps Psychiatric Clinic. The expert service being rendered the school is of greatest value. This report can add nothing. It can merely call attention to the excellent work being done and to the fact that the proposed plan of increasing the industrial equipment of the school would provide additional facilities for the use of these experts. It is suggested that, in addition to the facilities above referred to, in connection with each classroom for subnormal children there be one or two (two would be better) smaller rooms connected with the classroom by sash door and glass partition. These would be fitted up as workrooms where a special teacher could give instruction to a group of students as occasion demands, and where at other times these same students or a part of them might work by themselves and still be within view of the classroom teacher.

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[13] "Vocational training for women in industry;" report of special committee, Miss Cleo Murtland, chairman; National Society for Vocational Education, 140 West 42d St., New York; Bulletin No. 32, p. 156.

EVENING-SCHOOL CLASSES.

With such a day school as has been outlined for the children of Locust Point it would be practicable and very desirable to establish evening classes, both vocational and general in character. Then the school would be a community school, indeed, and to an unusual degree. Moreover, no additional space would necessarily be required for such classes, and the additional equipment would be inconsiderable. The benefits to the workers in providing opportunity for advancement in their trades, and the benefits to the industries in developing more intelligent employees, can hardly be overestimated. The school would take a new place in the community life if such classes were successfully maintained.

In order to accomplish this, however, the evening work would have to be given under efficient, progressive management, and every teacher would have to be recognized by the workers as an expert in his field. If blacksmithing were to be taught, it would have to be taught by one of the best blacksmiths in Baltimore, who is also a teacher; if shipfitting were to be taught it would have to be taught by an expert shipfitter and teacher; if drafting, by a practical draftsman and experienced teacher. Only in this way can the evening classes be thoroughly successful, and with this principle applied in a business-like way they could hardly be anything short of successful under the conditions proposed for the new building.

It is confidently believed that there are several hundred ambitious young men working in the Locust Point industries who would be very glad to take advantage of such courses, and there seems to be no good reason why such classes should not attract men from south Baltimore also. For some of the men working on the Point but living at a considerable distance, it would be possible to offer classes early in the evening, say from 5.30 to 7.30. For some others the classes should be from 7.30 to 9.30.

Without attempting to state what courses would be wanted, the following may be suggested as among the possibilities:

Shopwork.

Blacksmithing.
Acetylene welding.
Coppersmithing.
Sheet-metal working.
Electricians' work.
Machinists' work.
Pipe fitting.
Automobile repairing.
Carpentry.
Pattern making.

Drafting.

Elementary mechanical drawing.
Blue print reading.
Free-hand drawing.
Pattern drafting.

Physical science.

Laboratory course in mechanics.
Elementary physics.
Principles of electricity.
Automobile electricity.
Wireless telegraphy.

Mathematics.

Elementary course for machinists and machine operators.
Advanced courses for machinists.
Courses for sheet-metal workers.

General courses.

English composition.
Elementary social science.
Current literature, etc.

Recreation.

Basket ball.
Volley ball.
Folk dancing.

Physical training.

First aid.
Safety first.
Shop hygiene.

Home making.

Garment making.
Dressmaking.
Millinery.
Cooking.
Art needlework.
Laundry work.
Household accounts.
Budget making.

Part III.—THE BUILDING AND ITS EQUIPMENT.

The following statement concerning the building and its equipment is not intended to be complete, but is intended to be of some assistance to the architect who designs the building.

A. *Rooms Needed for Division of the School under Classroom Organization—The Elementary School.*

Two kindergarten rooms.—It would be desirable to have one of these large enough for all the pupils to play games together in it at one time. Connected with these should be a toilet for little children and a storeroom for supplies.

Three classrooms for Grade I.
Three classrooms for Grade II.
Three classrooms for Grade III.
Three classrooms for Grade IV.
Two classrooms for Grade V.

One classroom for ungraded boys.—This should be provided with a smaller workroom, separated from the main room with glass partition.

One classroom for ungraded girls.—This should have a workroom connected with it, as mentioned above for boys. If there could be three such workrooms for the two classrooms, that would provide a better arrangement.

One open-air classroom.

Two playrooms.—One for girls and one for boys. (Perhaps one of these might be a covered space outdoors.)

B. *Rooms Needed for Division of the School under Departmental Organization—The Intermediate School.*

Four study and recitation rooms for 20 pupils each.—All possible blackboard space should be provided in these rooms. These should be provided with chairs and small study tables (occupying a little more, but not much more, space than the ordinary school desks). They are comfortable for a larger range of sizes of people. They can be used for evening classes in blue-print reading, for example, and for a large variety of other evening work. In these rooms, or in a separate room near them, should be space for the storage of a variety of materials used in class work in these rooms.

One physical laboratory for 20 boys.—This should be provided with ample working space and a large amount of storage space. Only a small proportion of the equipment for this room should be the standard physics apparatus of high schools. Instead, the rooms should have: (*a*) Various types of machines for use in teaching mechanism—tracing cause and effect through the machine, etc.; and (*b*) standard measuring instruments used in industry—thermometers, amperemeters, voltmeters, various gauges, etc. Most of the other apparatus should be made by the students in working out experiments or in the shop classes. It is important that there be provided in the room water, sewer, and gas connections; also electric current and air pressure (or a means of producing it).

One physical laboratory for 20 girls.—In general this should be a very simple laboratory for work in the physics, chemistry, and biology for the household. Gas, water, electric, and sewer connections are essential. Ample working space and storage space are also essential.

Two demonstration rooms, each for 20 students.—Adjoining each of the laboratories named above should be a recitation and demonstration room. As the purpose in seating the students is to get then as near as possible to the instructor, these rooms should be provided with armchairs. Water, gas, sewer, and electric connections shoul be provided at the teacher's table, behind which, for the teacher's use, should be as much blackboard space as the room will allow.

One drawing-room for 20 boys.—Particular attention should be given to lighting this room well for both daytime and evening work. The tables should be large and open underneath, suitable for mechanical drawing. Locker space and drawing-board space should be provided for both day and evening classes. There should be a blackboard on one side of the room. A storeroom of considerable size should be provided in connection with this room.

One blue-print room.—In connection with the drawing-room it is important to provide a small but well-equipped room for making blue prints. This must have a sink especially for the purpose, fitted with water and sewer connections. It is desirable to partition off a section of the room for a dark room for photography. This, also, should have a sink with water and sewer connections.

One art room for 20 girls.—While this room should be fundamentally for work in freehand drawing, design, and color, it should also be so equipped that elementary mechanical drawing and home planning may be done in it to advantage. For this reason adjustable drawing stands are desirable for equipment. Blackboard space on one side of the room and ample storage and locker space are needed. Water and sewer connections should be provided for a small sink. This room also should be especially lighted for evening work.

One workroom for 20 girls in household art.—This should be provided with work tables and chairs. Both gas and electric connections should be provided for flatirons for pressing. In connection with this room there should be ample closet space and places for keeping unfinished work.

One fitting room.—Leading out of the workroom for household art there should be a fitting room for use in dressmaking.

One laboratory for 20 girls in household science.—This should be equipped with single or double tables that are reasonably near what the girls can have in their own homes. A sink should be provided for every two or four girls. In addition to water and sewer connections there should be in the room a chimney for a coal range, gas connections large enough for several gas stoves, and electric current for small electric heaters. Ample space should be provided for pantry, refrigerator, dish closet, and storage of supplies. (A small refrigerating machine might take the place of the ordinary ice refrigerator.)

One gymnasium.—This should be a large double gymnasium with folding partition across the middle so as to provide separate spaces for 40 boys at one end and 40 girls at the other. The dimensions ought to be about 50 by 100 feet. On special occasions the partition would be folded, thus giving one large room for exhibition games and drills.

The gymnasium should be on the ground floor and should have a special entrance. There should be ample light and sunshine in the room.

Shower baths and lockers.—Convenient to one end of the gymnasium there should be space for dressing rooms, shower baths, and lockers for girls, and at the other end the same accommodations for boys.

Swimming pool.—This should be placed so as to be conveniently accessible for either boys or girls. The swimming pool would be a most valuable feature of the building if evening classes were to be established.

One health classroom for 40 students.

Three shops, each for 20 boys.—Table 14 indicates that three shops will provide space for all the classes in the day school, but for convenience and fixing responsibility, especially when the possibilities of evening vocational work are considered, four shops are desirable. The city of Buffalo, in each of its 14 new intermediate schools, is providing for six shops—one each for woodwork, sheet-metal work, machine-shop practice, and printing, and two of the following: Ceramics, electricity, and automobile mechanics. Each of these shops, or "shop units," as they are termed by Mr. William B. Ittner, the architect of these buildings, includes an instructor's room and a general storeroom, in addition to the workshop, which is 26 by 48 feet. The size of these shops has been governed by a desire to reduce them to the smallest size reasonable to meet conditions in a building where only one kind of work is to be done in a given shop.

If only three shops are provided for the Locust Point school, they should be larger than the Buffalo shops (*a*) because in order to provide a sufficiently varied course of instruction two types of work would have to be done in each, and (*b*) because these shops ought to provide sufficient space for trade work both day and evening. For instance, one shop might be used for both forging and sheet-metal work. There would be some economy in not dividing the space into two separate shops, but two separate shops would be more desirable.

Another shop might be fitted up for machinists' work and automobile repair work with some slight saving of space, although there is almost always a shortage of space where automobile repair work is done. What is essentially garage space is needed.

While the Locust Point school plan is hardly comparable with the more extensive trade schools of the country, it may be helpful to know the sizes of the machine shops in some of these schools. A few are as follows:

Pratt Institute, Brooklyn, N. Y.	49 by 80 feet.
Hampton Institute, Hampton, Va	36 by 105 feet.
Worcester Trade School, Worcester, Mass	40 by 170 feet.
Dunwoody Institute, Minneapolis, Minn	44 by 120 feet.
Bradley Polytechnic Institute, Peoria, Ill	40 by 100 feet.
David Ranken, Jr., School of Mechanical Trades, St. Louis, Mo	47 by 110 feet.

If three shops only are provided they should be as follows:

Shop 1—Forging and sheet-metal work.
Shop 2—Machinists' work and automobile repair.
Shop 3—Woodworking and electric wiring.

In this case shop 2 should be larger than the others, or an adjoining space for a garage should be provided. In connection with every shop there should be a small room for the teacher, where he can keep tools, etc., under his own personal control; also a good stock and store room. Either in the shop or conveniently accessible should be space for a demonstration bench with blackboard and seats for 20 students. Armchairs for notetaking are the best. Sufficient wash room and locker room and toilet space should be provided convenient to the shops. Gas and electric power connections should be provided in each shop.

The details of equipment for each shop should be worked out before the shop is built, so as to be sure that all service pipes and wires reach the proper places for use before the floors are put in.

The shops should be planned as school shops, yet school shops of the practical, producing kind. Whatever is made in the shops should not be thrown away, but should serve some useful purpose in the school or in some other school, or in the home or play of the pupil who makes it; or, and especially in the advanced classes, it should be work for which there would be at least enough financial return to pay the cost of the materials used. Although no student is going to learn a complete trade in the time available in the shops, whatever he does learn should be practical. Correct habits should be formed in the use of tools, and the best industrial methods should be learned. For this reason, the nearer the shop and its equipment can be like an industrial factory, and at the same time provide facilities for the best methods of teaching, the more satisfactory it will be.

One common fault in school shops is a lack of reasonable provision for handling and storing material to be manufactured or in process of construction. Another fault is no provision for expansion or changes due to new conditions of the school. In order to meet these two conditions, as well as the usual problems of shop equipment, it is proposed that the shops for the Locust Point school be placed in a long, narrow, one-story building, 40 by 240 feet, with partitions constructed in such a way that they can be moved without undue expense. It is proposed that doorways connecting shops be so placed that trucks carrying stock can be run the entire length of the building. The accompanying sketch, figure 1, suggests the floor plan and indicates how readily it might be subject to change of partitions. The sketch showing a section of the building, figure 2, indicates that the windows should be placed 5 feet above the floor and running up to the ceiling or roof. There are three reasons for this: First, it allows the light to come down upon benches and machines in just the right direction; second, it prevents the annoying reflected light that often comes to the eyes from the ground outside the window; and, third, it provides a large amount of needed wall space under the windows for cases for unfinished work, for wall cabinets, for demonstration materials, for charts, for bulletin boards, tool cases, etc. Benches get the best light by being arranged with their left end toward the windows, provided there is good general lighting in front. Machines, of

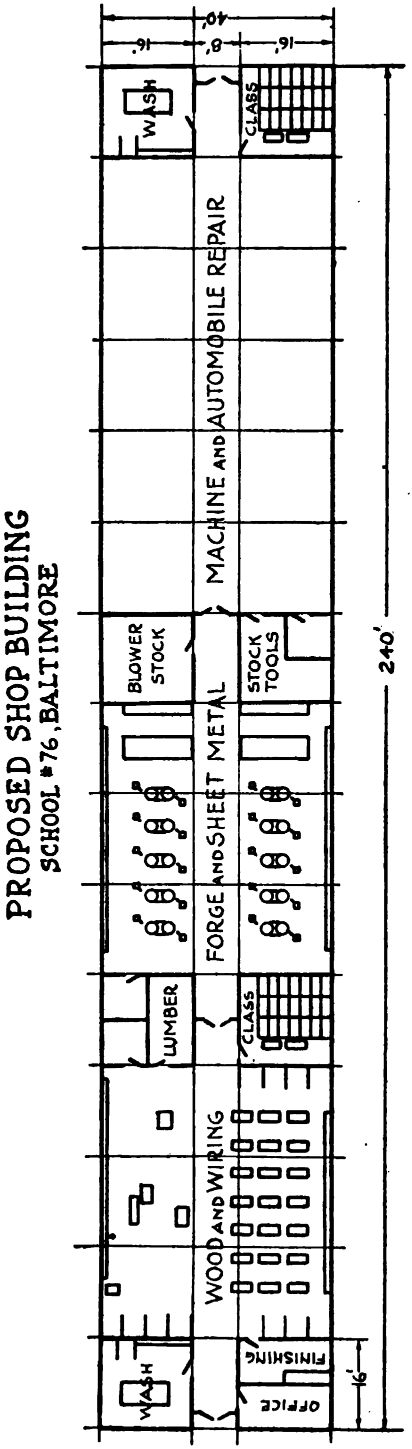

FIG. 1.—This plan is intended to show a well-lighted, convenient, practical, economical school shop building in which productive work may be done to advantage. A part of the equipment is suggested in order to demonstrate that it can be placed advantageously in the space allotted to it. In the "wood-and-wiring" shop benches are on one side, and machines and floor space for setting up work are on the other; cases are under the windows. Wiring booths, which may be two stories high, are at the ends of the room. In the "forge and sheet-metal" shop the benches for the sheet-metal work are at one end. Several good arrangements of the machine and "automobile-repair" shop are possible in the space designated.

course, have to be arranged according to the best lighting for use. Single benches are more desirable than double benches that require pupils to work face to face. In some kinds of work long benches, where several pupils work on the same side of the bench, are satisfactory.

All three of the shops should be provided with satisfactory lights for evening work.

If it is not practicable to provide a one-story shop building of the dimensions suggested, a two-story building, 40 by 144 feet, with stairway at each end, would work out satisfactorily. In that case the woodworking and wiring shop and the forge and sheet-metal shop should be on the second floor, while the machine and automobile repair shop should be on the first floor. It should be noticed that, to provide satisfactory working space for 20 boys in either of the two kinds of work proposed for each of these shops, the space provided for the two small shops is 40 by 48 feet, while a space 40 by 80 feet is needed for the machine and automobile repair shop.

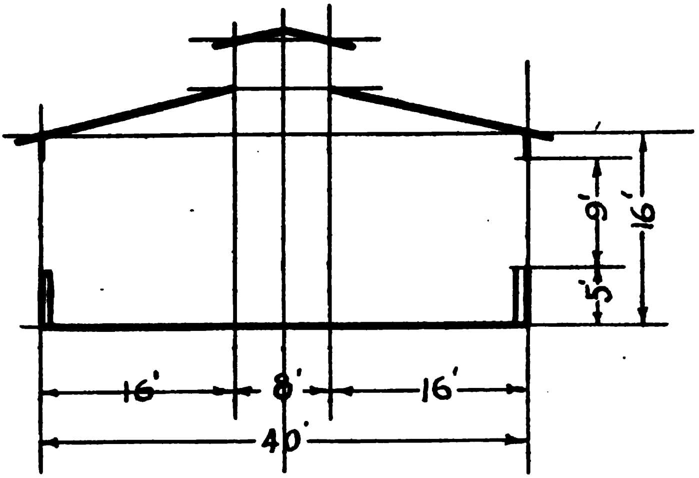

FIG. 2.—Section of the proposed shop building.

Two demonstration rooms and two washrooms are provided for the three shops. Each shop should have a teacher's room and a stockroom. There should be an office for the director of the industrial work.

C. *Rooms Needed for Use of Both Divisions of the School and for Community Use.*

One assembly hall.—This should be large enough for the entire school, including the intermediate school division—800 to 900 people. It should have a stage large enough and convenient for concerts, lectures, and school plays, and should be provided with a moving-picture outfit.

One civic room.—This might be a rather large lobby entrance to the gymnasium. It would be a part of the equipment of the health and recreation department for the intermediate school. If evening classes were established it would become the central meeting place of the men. On election days it would contain the voting booths.

Five small dispensary rooms.—One each for dental, surgical, general, baby, and tuberculosis patients. These should be connected with a waiting room, should have all needed water, sewer, gas, and electric connections, should have a toilet, and should have a separate entrance to the building.

General office for the school.

Principal's private office.

APPENDIX I.

Comparison of teaching staff of proposed intermediate school with that of the upper grades in the present school as it was about the time of the fire. These figures are only approximately correct.

Present school.		Proposed school.	
Teachers.	Salary.	Teachers.	Salary.
2 Grade VI	$2,600	2 English and arithmetic	$2,600
1 Grade VII	1,300	2 Mathematics, English, and social science	2,600
1 Grade VIII	1,300	1 Physical science, geography, and history (boys)	1,800
1 Manual training	1,300	1 Physical science, geography, and history (girls)	1,500
1 Cooking	1,300	1 Mechanical drawing	1,800
1 Sewing	600	1 Art	1,500
1 Playground	150	1 Household science	1,500
1 Lunch room	600	1 Household art	1,500
1 Grade V (not needed under new plan)	1,300	1 Trade work for girls	1,500
	10,450	1 Director industrial training	2,400
		3 Shopwork	5,400
		1 Health (boys)	1,800
		1 Health (girls)	1,500
		1 Playground	1,000
		1 Lunch room	1,000
			29,400

In comparing these figures one should recall that the proposed scheme provides for two sections (40 students) of trade (Grade IX) work, and for two sections (80 students) of Part-Time work, and for 33⅓ per cent more students in Grades VI, VII, and VIII, on the theory that the enriched offering of the school would hold students in school longer. Beyond these items the difference represents improved quality in the education offered.

APPENDIX II.

A Proposed Scheme for Training Technologists, Executives, and Engineers for the Baltimore Dry Dock & Shipbuilding Co.

Not long ago Mr. Holden A. Evans, president of the Baltimore Dry Docks & Shipbuilding Co., stated that he was interested in developing a plan for educating young men selected from the employees of the Baltimore Dry Docks Co. to become technologists, executives, and engineers. He suggested that he would consider 100 such men an appropriate number to educate, and, furthermore, that the company would be willing to contribute liberally toward the education of these men.

It was suggested that a proposed plan for the accomplishment of Mr. Evans's purpose be outlined and briefly discussed as an appendix to this report. There are two fundamental considerations that enter into such a problem:

1. The men should be self-supporting while pursuing their education.
2. The men must maintain their interest in and connection with the Baltimore Dry Docks Co.

It is believed that a plan providing for the self-support of the men to the extent of their personal living expenses would bring better and more permanent results to both employer and employee than a plan whereby the employer were to assume all financial obligations, even if he were willing to do so. If the employer were to provide free tuition, and perhaps a bonus at the end of each year, or other definite period, conditional on standing in school work and record as an employee, that is all the employer should furnish, providing these would furnish sufficient incentive to effort, and would not lessen the man's self-respect. It is customary for a student to accept free tuition through a scholarship or from the public, but not to accept money for living expenses except from his parents, or from a fellowship that he has himself won.

It is equally important and entirely reasonable that, if the proposition of Mr. Evans is in any sense a business one from the standpoint of the Baltimore Dry Docks Co., while the company is spending its money for the education of these young men, it should take no more than a fair business risk of losing these young men soon after they have completed their education. One way to retain the men in the employ of the company would be to enter into an agreement corresponding to the indenture of an apprentice.

It is doubtful, however, whether this would bring as satisfactory results, either from the business standpoint, or the educational standpoint, as a plan whereby the employee's interest in the company's work and welfare are maintained throughout the process of education. It is believed that this can be done.

These two fundamental considerations lead to the conclusion that a part-time—probably a half-time—plan of schooling would be the most satisfactory one. By having the men work in the industry half of the time in pairs there would always be a man for the job in the industry and also a man in the school to receive instruction. Both the industry and the school could go on without serious interruption. If a man makes the best of his opportunities for study outside of working hours, and does not spend money wastefully, it is probable that the half-time pay would provide his necessary living expenses.

The first and the greatest educational difficulty in carrying out the plan is to provide a satisfactory means of getting the man through his secondary schooling. It is taken for granted that these men have not graduated from a high school, and that they must first be given a course to prepare them for entrance to the engineering college. There are two reasons why the ordinary public high school is not the best place for such a group of students. In the first place the men would be older than public high-school students pursuing the same studies; they would feel uncomfortable, to say the least, under such conditions.

In the second place, it would not be practicable for these men to enter into all the school activities at the same time and on the same basis as the regular full-time high-school students. They could not afford to be diverted from their study and work to the same extent, or at least in the same way, that has become common in most high schools; yet they should have a sufficient amount of the right kind of physical training and recreation.

In the third place, while this group of students must cover the same essential studies for college entrance as the regular high-school students, they will have to do it in a different way; at first, at least, they need to be taught by different methods. There must be some of the same intensified atmosphere in the school as in the shop; they must have a chance to complete the course in a less number of school hours than is common in high schools. The college preparation of eighth-grade graduates ought by this means to be completed in five years on a half-time basis, possibly less, if it is an all-year-round school. With selected students there is reason to believe that this could be accomplished.

These observations argue for a special secondary school for the 100 selected men.

As to possibilities for such a school in Baltimore, attention is called to the fact that the Market Street building of the Maryland Institute is not used very much in the daytime, that the facilities in this building could with a little adjustment be made satisfactory, and that such a school is in harmony with the aims of that institution.

If 50 out of 100 men starting on such a course could be ready for the engineering college at one time, there is little doubt that the Johns Hopkins University would be willing to make the experiment of taking such a group on a part-time basis—perhaps three months at the factory and three months at the university—provided the extra expense involved in such a scheme were to be met. If the local university could not do this, some other would be glad to do it. In fact, the plan proposed is in harmony with the experience of the engineering department of the University of Pittsburgh, where a cooperative part-time plan has been in operation since 1911. After five or possibly six years of part-time college work a man would receive his degree in engineering.

It is believed that such a plan, carried out by efficient, sympathetic teachers and with the full cooperation of the management of the Baltimore Dry Docks Co., would provide a great opportunity to young men of ambition and ability and would insure to the company the needed supply of trained technologists, executives, and engineers.

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BULLETIN, 1920, No. 42

EDUCATION FOR HIGHWAY ENGINEERING AND HIGHWAY TRANSPORT

REPORT OF THE CONFERENCE ON HIGHWAY ENGINEERING AND HIGHWAY TRANSPORT EDUCATION, HELD IN WASHINGTON, MAY 14 AND 15, 1920, UNDER THE DIRECTION OF THE COMMISSIONER OF EDUCATION

WITH

REPORTS OF THE PRELIMINARY MEETINGS

Prepared under the direction of
F. L. BISHOP and WALTON C. JOHN

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

BULLETIN OF THE BUREAU OF EDUCATION FOR 1920.

No. 1. The problem of mathematics in secondary education. A report of the Commission on the Reorganization of Secondary Education, appointed by the National Education Association.
2. Monthly record of educational publications, January, 1920.
3. Private high schools and academies, 1917-18. Advance sheets from the Biennial Survey of Education in the United States, 1916-1918.
4. The problem of adult education in Passaic, N. J. Mrs. A. B. Fernandez.
5. Monthly record of educational publications, February, 1920.
6. Monthly record of educational publications, March, 1920.
7. Requirements for the bachelor's degree. Walton C. John.
8. Agricultural and mechanical colleges. Walton C. John.
9. The feasibility of consolidating the schools of Mount Joy Township, Adams County, Pa. Katherine M. Cook and W. S. Deffenbaugh.
10. Correspondence study in universities and colleges. Arthur J. Klein.
11. Statistics of State school systems, 1917-18. Advance sheets from the Biennial Survey of Education in the United States, 1916-1918. H. R. Bonner.
12. Training teachers for Americanization. John J. Mahoney.
13. Educational work of the Commercial Museum of Philadelphia. Charles R. Toothaker.
14. Monthly record of educational publications, April, 1920.
15. Monthly record of educational publications, May, 1920.
16. A survey of education in Hawaii.
17. Monthly record of educational publications, June, 1920.
18. Lessons in civics for the six elementary grades of city schools. Hannah M. Harris.
19. Statistics of public high schools, 1917-18. Advance sheets from the Biennial Survey of Education in the United States, 1916-1918. H. R. Bonner.
20. Salaries in universities and colleges in 1920. L. A. Kalbach.
21. Schools in the bituminous coal regions of the Appalachian Mountains. W. S. Deffenbaugh.
22. A school building program for Meriden, Conn.
23. A school building program for Gloucester, Mass.
24. Statistics of city school systems, 1917-18. Advance sheets from the Biennial Survey of Education in the United States, 1916-1918. H. R. Bonner.
25. Monthly record of educational publications, September, 1920.
26. Reorganization of science in secondary schools. A report of the Commission on the Reorganization of Secondary Education, appointed by the National Education Association.
27. Survey of the schools of Brunswick and of Glynn County, Ga.
28. Monthly record of educational publications—Index, February, 1919—January, 1920.
29. The national crisis in education—An appeal to the people.
30. State laws relating to education, enacted in 1918 and 1919. Wm. R. Hood.
31. Statistical survey of education, 1917-18. Advance sheets from the Biennial Survey of Education in the United States, 1916-1918. H. R. Bonner.
32. Monthly record of educational publications, October, 1920.
33. Educational directory, 1920-21.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

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25 CENTS PER COPY

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, September 21, 1920.

SIR: On May 14–15 I held in Washington a Conference on Education for Highway Engineering and Highway Transport. This was attended by about 75 highway engineers, deans and supervisors of engineering in colleges, universities, and technical schools, National, State, and county highway commissioners, and men interested in highway and automotive transportation. Out of this conference there grew a committee which will continue the consideration of this subject until the desired results in more adequate preparation for these phases of education have been obtained. The proceedings of the conference have been edited for publication as a bulletin of the Bureau of Education. I am herewith transmitting the manuscript.

This bulletin contains much material of immediate and practical value to those who are directly interested in the problems of education for highway engineering and highway transport. I am, therefore, asking that it be printed as early as possible.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

EDUCATION FOR HIGHWAY ENGINEERING AND HIGHWAY TRANSPORT.

INTRODUCTION.

Preliminary investigations made by the Bureau of Education, with the cooperation of the Bureau of Public Roads, the National Automobile Chamber of Commerce, the State highway departments, and other agencies national in scope, have revealed the necessity of a relatively large number of college-trained men able to cope with the many problems of highway and highway transportation engineering.

In order to determine more accurately these needs the Commissioner of Education called a meeting of a committee on January 28, 1920, in the Bureau of Education. The committee, in addition to Commissioner Claxton, included the following: Mr. T. Warren Allen, general inspector, Bureau of Public Roads; Mr. A. T. Goldbeck, engineer of tests, Bureau of Public Roads; Dr. Charles R. Mann, chairman, Advisory Board, War Plans Division, War Department; Dr. Samuel P. Capen, and Dr. Walton C. John, Bureau of Education.

The committee studied in a general way the nature of some of the problems facing the colleges of engineering; first, with respect to the improvement of highway engineering curricula; second, with respect to the number of college-trained highway engineers probably required in the near future; third, with respect to increased research in highway construction problems.

It was recommended that further inquiry should be made into the problems presented, on account of the lack of data.

Almost at the same time the leaders in the automotive and tire industries became aware of a need of a large number of college-trained men to further the many interests of highway transportation. Consequently, representatives of highway transport interests were called into conference on February 13, 1920, by Mr. Roy D. Chapin, president of the Hudson Motor Car Co. The conference group included Mr. R. C. Hargreaves, vice president of the National Highway Traffic Association, and district manager of the Goodrich Tire & Rubber Co., of Detroit, who acted as chairman of the meeting; Mr. Pyke Johnson, secretary of the highways committee of the National Automobile Chamber of Commerce, Washington, D. C.; Mr. C. W. Reid, chief of the transportation bureau of the Federal Highway Council, Washington, D. C.; Mr. E. T. Herbig, secretary and treasurer of the National Association of Motor Truck Sales

Managers, Wabash Ind.; Mr. C. S. Pike, Paige Motor Co., Detroit, Mich.; O. T. Hillschafer, Chandler Motor Car Co., Cleveland, Ohio: Mr. John S. Pearson, representing Dr. Hollis Godfrey, president of Drexel Institute, Philadelphia; and Dr. Walton C. John, of the Bureau of Education.

An attempt was made at this meeting to ascertain in a general way the extent of the demands for auto-truck operators, fleet managers, transportation managers, and transportation salesmen. It was agreed that each one of the interests represented at the meeting should endeavor to define more clearly the problems which were being raised in order that at a future time suitable recommendations might be prepared for the use of colleges and schools of engineering as well as for the industries.

With this in mind a conference was called under the auspices of the National Highway Traffic Association at Ann Arbor, Mich., at the Michigan Union, on April 15, 1920. This meeting was attended by representatives of the automotive and tire industries, the Michigan State Highway Commission, American Association of State Highway Officials, colleges of engineering, and the Bureau of Education.

The following delegates were present:

C. R. Alden, head of the engineering department, Detroit Institute of Technology.

A. H. Blanchard, professor of highway engineering and highway transport, University of Michigan, and president National Highway Traffic Association.

Roy D. Chapin, president Hudson Motor Car Co., Detroit, Mich., vice president National Automobile Chamber of Commerce.

H. R. Cobleigh, National Automobile Chamber of Commerce, New York, N. Y.

Frank Cushman, Federal Board for Vocational Education, Indianapolis, Ind.

F. W. Davis, consulting engineer, Pierce-Arrow Motor Car Co., Buffalo, N. Y.

George C. Diehl, chairman Good Roads Board, American Automobile Association, Buffalo, N. Y.

R. C. Hargreaves, vice president National Highway Traffic Association and district manager Goodrich Rubber Co., Detroit, Mich.

W. K. Hatt, head of the school of civil engineering, Purdue University, Lafayette, Ind.

E. T. Herbig, secretary and treasurer National Association of Motor Truck Sales Managers, Wabash, Ind.

O. T. Hillshafer, Chandler Motor Car Co., Cleveland, Ohio.

Charles S. Howe, president Case School of Applied Science, Cleveland, Ohio.

Walton C. John, United States Bureau of Education, Washington, D. C.

Pyke Johnson, secretary of Highways Committee, National Automobile Chamber of Commerce, New York, N. Y.

George E. Myers, professor of industrial education, University of Michigan, and supervisor of education for State board for vocational education, Ann Arbor, Mich.

Frank F. Rogers, chairman State highway commission, Lansing, Mich.

H. M. Rugg, director of technical instruction, Y. M. C. A. schools, New York, N. Y.

H. G. Shirley, secretary Federal Highway Council, Washington, D. C.

H. E. Riggs, professor of civil engineering, University of Michigan.

CONDENSED REPORT OF THE PRELIMINARY CONFERENCE ON HIGHWAY AND HIGHWAY TRANSPORT ENGINEERING EDUCATION, ANN ARBOR, MICH., APR. 15, 1920.

The preliminary conference on highways and highway transport engineering education was held in the Michigan Union, April 15, 1920.

The temporary chairman, Mr. Roy D. Chapin, called the meeting to order at 11 a. m. Before introducing the chairman of the day, Mr. Chapin called attention to the important changes in the mode of living in this country which have resulted from the use of the motor car. The automobile and motor truck have become vital factors in maintaining our economic equilibrium.

During the latter part of the nineteenth century this country witnessed a great period of railroad construction. However, in recent years relatively little railroad construction has been undertaken, but there has been a great increase in the use of highways for the shorter hauls. The war made it clear that the roads had become very important commercial arteries; and, on account of the increasing demand for highway transport, unusual problems have developed in highway construction and maintenance in addition to those of highway transport.

Among those problems is that of the education of men capable of meeting the issues of the new era of gas.

The automobile industries doubtless employ more trades than any other industry, and each of these must have men who understand the problems connected with auto transportation.

It is the purpose of this meeting to study the means by which colleges and universities can be helped in developing the right courses of study and in obtaining those men which are urgently needed in the development of highways and highway transport in this country.

Mr. Chapin then introduced the chairman of the day, Mr. R. C. Hargreaves, of Detroit.

Mr. Hargreaves emphasized the importance of this new era in transportation. Attention was called to the value of the work done up to the present by highway engineers in building roads for this new type of transport.

Nevertheless, the time has come for the preparation of fundamental data concerning the many phases of highway transport, similar in scope and importance to the notable work by Wellington entitled "The Economic Theory of the Location of Railroads."

Mr. Frank F. Rogers, chairman of the Michigan State Highway Commission,[1] was introduced at this time.

He stated that out of the 250 employees now working for the State highway department about 80 or 90 are graduated civil engineers; the rest are men who have had more or less engineering education, with the exception of the clerical and auditing forces. Mr. Rogers's preference is for college graduates who have been raised on the farm or in a small country village, for men who understand the psychology of the farmer.

It was also brought out that the time had come when there should be a clear understanding between the manufacturers and users of motor vehicles—particularly trucks—that these vehicles should not be built, nor should they be loaded, beyond certain limits, in order that the expense of road building might not reach a prohibitive figure.

The chairman next introduced Mr. George C. Diehl, county engineer, Buffalo, N. Y.

Mr. Diehl discussed the highway engineering and highway transport professions from the standpoint of the American boy. He called attention to the necessity of building the boy's character by means of a work or a profession which will be of utility and service. Such vocations are found in modern highway construction and in those industries which center about auto transportation.

Furthermore, boys and girls should know the value of the highway. The study of the road problems should not be limited to the college, but should be a part of elementary and high school programs.

Students should know the rules of the road and of traffic.

It is also desirable that highway officers of all types should have a far greater acquaintance with the economics of road construction and of traffic regulations.

Mr. H. G. Shirley, secretary of the Federal Highway Council, stated that road builders could put the crust of the road together. They could assemble the materials, they could mix them, and they could spread them for the slab; but up to the present nothing was definitely known of the construction or the contents of the ground on which the slab is to rest. Few superficial tests have been made. Nothing is known concerning the attraction or the gravitation of the soil; nothing about its bearing power.

Not until the problem of the soil is solved will roads be built substantially or economically.

The next on the program was Mr. E. T. Herbig, secretary and treasurer of the National Association of Motor Truck Salesmen, who said, in brief:

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[1] Mr. Rogers was also delegated to represent Mr. Paul D. Sargent, president of the American Association of State Highway Officials.

There are 700,000 motor trucks in the country to-day, representing an investment of nearly $2,000,000,000. This does not include upkeep and maintenance, which reach a very much higher figure. Yet it is said that the motor-truck industry is still in its infancy.

Motor-truck fleets are being operated to an increasing extent by individual owners. Mention may be made of the American Railway Express Co., that now operates approximately 2,000 motor trucks. The Armour, Swift, Cudahy, Morris, and Wilson packing companies own and operate very large fleets of motor trucks.

The truck manufacturers are seeking men competent to take over the handling and supervision of these large investments in motor-truck equipment. These men are hard to find.

It should also be borne in mind that to-day the motor-truck manufacturers are not selling merely motor trucks; they are selling transportation—that is, fitting the particularly well-adapted transportation unit to the particular job.

In view of the opportunities opening up for trained motor-truck engineers, transportation experts, etc., special courses, collegiate in character, should be offered for the training of these men. The training of motor-bus and motor-truck drivers deserves special attention in view of the important investments involved.

Mr. F. W. Davis, of the Pierce-Arrow Co., followed and spoke of his effort to train men to take charge of motor-truck fleets. In preparing for his lectures he found a great deal of information available but in poorly organized form. There was, indeed, a great need of a handbook on highway transport, just as the chairman had remarked.

The Society of Automotive Engineers has planned to gather data concerning the rudiments of the science of transport engineering.

THE AFTERNOON SESSION.

After adjournment for lunch the afternoon session was called to order by Chairman Hargreaves at 2 p. m. Mr. Chapin at this time spoke of the greatly increased use of the passenger automobile. This adds materially to the problems now under discussion. Nevertheless, education for the automotive industries goes far beyond that of training skilled engineers or mechanics. It means the preparation of men for such varied services as are found in advertising, service, and executive departments. The educational problem is indeed a general one.

President C. S. Howe, of Case School of Applied Science, was next introduced.

His viewpoint was that of the college executive. He agreed with the speaker who had said "We did not know very much about highway construction"; he would go further and say " We don't know anything about it." When the best road an engineer can build is put down and goes all to pieces in one season, and the bottom also drops out, it is evident the engineer did not know the principles of highway construction.

A special study of the highway should be made, preferably by a Government organization with adequate authority and plenty of money. This organization should experiment with all kinds of soils and all kinds of roads.

As to the colleges, they are very desirous of helping in the solution of these problems, but they are limited in many ways and especially in the matter of money. A large number of college faculty members are leaving because manufacturers offer higher salaries than the colleges can pay. If the colleges are to expand and give the industries the men they want, college faculties must be greatly enlarged, but the increased amounts needed to pay the new professors can not at present be obtained. The situation is also further complicated by the great increase in college enrollments.

As to specialization in engineering, it was felt that there was a danger of overspecialization on account of the demands of the many and varied industries for specialized courses or curricula. The college should not specialize too much. Perhaps the additional special training now needed in highway and highway transport engineering could be successfully carried on in a practical way during the freshman, sophomore, and junior vacation periods. This experience would make the students more useful to the industries immediately after graduation.

It should be borne in mind that most of these students must take up something that will pay them, so that they can lay up money to live on the following year while they continue their college work.

Dr. W. K. Hatt, of Purdue University, was the next speaker. He called attention to the unexpected load under which the engineering schools are staggering. He suggested that the automotive interests should endow chairs in highway transport and should come to the campus as other organizations are doing and recruit students for their own needs, and at the same time there should be established organic cooperative relations in the colleges for reciprocal service in training men for these industries.

In introducing the next speaker, Prof. A. H. Blanchard, of the University of Michigan, Chairman Hargreaves spoke of the leadership of the university in developing comprehensive courses in highway engineering and highway transport and in offering special facilities for study and research to engineers in active service.

Prof. Blanchard, in the opening of his remarks, stated that the men to be trained by the universities for positions in the field of highway engineering fall into three classes: First, the men who are to enter the highway departments of our States, counties, and municipalities; second, the men who are to be engineers for highway contractors; and, third, the men who are to occupy the positions of sales engineers for companies manufacturing highway machinery and materials. As has already been outlined, the demand for those men far exceeds the supply. How is the demand being met to-day?

Highway engineering in the majority of the institutions throughout the United States is looked upon as a side issue. In many institutions the course in highway engineering consists of descriptions of methods of constructing various types of roads and pavements. Naturally the result has been that only two or possibly three hours per week for a half year of the entire four years have been devoted to this subject, and in the majority of institutions the work has been given by men who have had no training in highway engineering and have no interest in it. Due to the fact that the great majority of institutions only give a two or three hours' course, the presidents, trustees, or boards of regents do not consider it practicable to secure the services of a man who is especially trained in that field.

The situation is complicated in those institutions which feel that more attention should be given to highway engineering, because many able teachers of highway engineering are leaving educational institutions on account of the low salaries paid and the readiness with which they can secure professional or commercial positions in highway work to which is attached satisfactory financial remuneration. If it is desired that highway engineering be taught in the near future by properly trained men, it will be necessary to select institutions well distributed throughout the United States and to create chairs of highway engineering which shall be independent of the financial budgets of the institutions concerned.

Following this Prof. Blanchard outlined various courses in highway engineering and highway transport. In order to avoid duplication the outlines are given on pages 87–91 in connection with the recommendations of the committee on highway transport education at the Washington conference.

By special invitation of the chairman, Prof. H. E. Riggs, of the department of civil engineering of the University of Michigan, gave a historical résumé of the development of highway engineering education at the University of Michigan.

Prior to October, 1912, the work in the department of civil engineering at the University of Michigan did not include any separate course in highway engineering. The only attention devoted to the subject was a small part of the time of a course on general municipal engineering problems.

In the spring of 1912 the department was recognized and the chair of civil engineering was divided, new chairs being created in structural engineering, sanitary engineering, hydraulic engineering, and highway engineering. This latter chair was not filled at the time that it was created, but new men were called to the university to the other three new full professorships.

A course in highway engineering, two hours a week during the senior year, was inaugurated at this time and was required of all students in civil engineering.

In the fall of 1914 it became evident to the staff that highway engineering was a subject of vital importance in the State of Michigan, and that it would be necessary, in order to meet the demands of the State highway department and the county, to devote more attention to the subject than had been done in the past.

Consequently, Mr. John R. Cox was asked to devote his whole time to the subject of highway engineering. Courses in roads and pavements, design of highway structures, highway laboratory, and highway and municipal surveys were inaugurated in the fall of 1914. During this year it was felt that the work of the highway laboratory could be very greatly extended and its usefulness to the State emphasized if it were placed at the service of the people of the State. A program was formulated and perfected by the board of regents under which the highway laboratory was placed at the disposal of officials throughout the State and all tests of highway materials such as cement, rock, sand and gravel, concrete, asphalt, asphalt mixtures, asphalt block, brick, and culvert pipe were made by the laboratory free of charge. One permanent assistant was placed in the laboratory, and during the year a considerable number of tests were made.

During the next four years the work of the department grew rapidly and interest in the work developed very largely among the students. A most cordial relation has always existed between the departments in the university and the State highway department, the university being unreservedly back of every move which has been made by the State highway commissioner to better conditions and methods in all parts of the State.

With the resignation of Mr. Cox to accept the county engineership of Washtenaw roads in the fall of 1919, Prof. Arthur H. Blanchard was appointed professor of highway engineering in charge of the university work.

Prof. Blanchard recommended the adoption of the short period mid-winter courses which were perfected by the regents and put into effect in a small way during the year 1919–20. The amount of work in highway engineering was somewhat increased and the courses enriched, so that at the present time it is probable that the Michigan work is unexcelled in any university in the general character of the course that is required of graduates taking this line of activity. At the same time that Prof. Blanchard was appointed, Mr. John H.

Bateman, engineer for the State highway commission, was appointed assistant professor of highway engineering and director of the laboratory. The laboratory work has been systematized and very greatly increased. In the fall of 1919 the laboratory was recognized as the official State laboratory of the State highway department. At the present time the work of the laboratory has grown to such an extent that five assistants are employed, and during the month of June, 1920, the laboratory completed 198 tests for the State highway department, 9 for municipalities of the State, 10 for the University of Michigan, and 1 for the United States Bureau of Public Roads, a total of 218 tests.

In the spring of 1919 Mr. Roy D. Chapin, president of the Hudson Motor Car Co., of Detroit, an alumnus of the university, urged on the civil engineering staff and on the authorities of the university the importance of devoting some attention to the subject of highway transportation and the relation of the highways and the traffic to take care of it, suggesting that courses in highway economics and highway transport be established. During the past year much attention has been given to this subject. One course was offered and given among the short-period courses, and courses were outlined for regular university work in this subject.

Plans are on foot for a closer correlation of the work of the department of mechanical engineering, under which head the subdepartment of automobile engineering is thoroughly established at Michigan, and the work of civil engineering.

It seems to be clear that the present time, during the period of large expenditures in the building of roads and in view of the greatly increasing interest in that subject, is the time for the colleges to devote their best energies to a thorough study of all phases of the economics and engineering of the subject. The president and board of regents of the University of Michigan have been prompt in their recognition of the timeliness of this work and have been liberal in the extreme in their support of it, in line with their general policy of devoting all available funds to the particular line of work which is of present importance and value to the people of the State.

In this manner the work in highway engineering and highway transport has grown at the University of Michigan from a very small beginning six years ago to the work of importance and magnitude from the educational standpoint and of merit as an adjunct and auxiliary of the State highway department.

From the outset it has been entirely free from politics and free from jealousies. The work is distinct. The university has nothing to do with the building of roads in the State other than in a purely advisory capacity in the matter of passing upon the quality of materials and the general subject of standards of specifications for materials. The majority of work is clearly the training and preparation of men for service in the field of highway engineering and in the new field of transportation which is developing and will develop in our modern highways.

At the chairman's request a brief summary of the discussions of the committee were made by Dr. Walton C. John, of the Bureau of Education, who called attention also to the fundamental work carried on by Mr. Chapin and Mr. Hargreaves and their associates in Washington at the time of the war.

The results of the national crisis in transportation have led almost directly to this meeting in Ann Arbor and to the proposed conference soon to be held in Washington.

A clear outline of some of the larger problems now before the committee is found in the book entitled "Democracy in Reconstruction."[1] In his chapter on "Motorized highways the basis of a national transport system," Mr. Hargreaves has shown concisely the relation of an adequately planned and managed motor transport system to the economic development of the country in time of peace. He has also pointed out its determining character as an agency in the successful prosecution of war.

REPORT OF THE COMMITTEE ON RESOLUTIONS.

The following resolutions were proposed by the resolutions committee and, on being put to a vote by the chairman, were passed:

Whereas American science and industry have forged a new unit of highway transportation which is destined to bring about far-reaching changes in life and in thought, not only in this country but in the world; and

Whereas as a vital necessity to the economic development of those problems not alone in the economic location, construction, and maintenance of our highways, but in the preparation of skilled men to undertake both the administration and operation of these highways and of the industries devoted to the production of these units of transportation, and

Whereas the American people have seen fit to meet the need for better highways with appropriations for hundreds of millions of dollars for roadbeds which can only be expended efficiently and intelligently as we comprehend in the fullest extent the relationship existing between the highway and highway transportation, while industry has created giant organizations to supply the transportation units; and

Whereas these problems, calling as they do for men of the highest collegiate and vocational preparation, can best be solved through the development of collegiate and vocational education in highway engineering and highway transportation: Now, therefore, be it

Resolved, That we, the representatives of education, industry, and Government, assembled in conference at Ann Arbor to discuss the problems before us, do call upon the Hon. P. P. Claxton, Commissioner of Education of the United States, to bring this subject to the attention of the people of the United States through a conference to be held in Washington and consisting of the leaders in thought and in action on this subject; and be it further

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[1] "Democracy in Reconstruction," edited by Frederick A. Cleveland and Joseph Schafer. 1919.

Resolved, That in order to assist and advise with the United States Commissioner of Education in any manner which he may deem fitting, the chairman of this conference is directed to name a committee of three members, representing education, industry, and Government.

The chairman accordingly appointed the following gentlemen: Dr. Walton C. John, of the Bureau of Education; Mr. Thos. H. MacDonald, Chief of the Bureau of Public Roads, United States Department of Agriculture; and Mr. Pyke Johnson, secretary of the highways committee, National Automobile Chamber of Commerce.

At this conference the question of a four-year curriculum in highway transport and cognate subjects will be carefully studied. We may be assured that the results of the investigations of this conference, both in behalf of highway transport education and highway engineering education, will be studied carefully by engineering educators at large.

PROCEEDINGS OF THE CONFERENCE ON HIGHWAY ENGINEERING AND HIGHWAY TRANSPORT EDUCATION, HELD IN WASHINGTON, D. C., MAY 14 AND 15, 1920.

PROGRAM OF THE CONFERENCE.

Chairman: P. P. Claxton, United States Commissioner of Education.

Executive secretary: Walton C. John, specialist in charge of land-grant college statistics, Bureau of Education.

Educational secretary: F. L. Bishop, dean of the school of engineering, University of Pittsburgh, secretary of the Society for the Promotion of Engineering Education.

FRIDAY, MAY 14, FORENOON SESSION.

10.00 a. m.

(*a*) Address of welcome by the chairman, P. P. Claxton, Commissioner of Education.

(*b*) "The Widening Field for Engineers in Highway Development," by Thomas H. MacDonald, Chief of the Bureau of Public Roads, United States Department of Agriculture.

(*c*) "The Need for Better Trained Men in Highway Engineering and Highway Transport Engineering," by Roy D. Chapin, president of the Hudson Motor Car Co.

(*d*) "What Attitude should Technical Schools take toward the Demand for Training in a New Professional Specialty," by Samuel P. Capen, director of the American Council on Education.

(*e*) "The Curricula in Highway Engineering and Transportation," by Walton C. John, specialist in charge of land-grant college statistics, United States Bureau of Education.

12.30 p. m. RECESS.

AFTERNOON SESSION.

GROUP MEETINGS.

2.15 p m.

(*a*) *Conference committee on highway engineering education.*

Chairman: Thomas H. MacDonald, Chief of the Bureau of Public Roads.

Educational subcommittee: Secretary, W. K. Hatt, head of the school of civil engineering, Purdue University; Hector J. Hughes, professor of civil engineering, Harvard University; C. J. Tilden, professor of engineering mechanics, Yale University.

(*b*) *Conference committee on highway transportation education.*

Chairman: George C. Diehl, chairman good roads board, American Automobile Association.

2.15 p. m.—Continued.

Educational subcommittee: Secretary, A. H. Blanchard, professor of highway engineering and highway transport, University of Michigan; Emory R. Johnson, dean, Wharton School of Finance and Commerce, University of Pennsylvania; John Weber, associate professor of mechanical engineering, University of Pittsburgh.

(*c*) *Conference committee on business education and highway and technical research.*

Chairman: Dr. A. F. Woods, president of the State University of Maryland.

Educational subcommittee: Secretary, George F. Zook, specialist in higher education, United States Bureau of Education; A. T. Goldbeck, engineer of tests, Bureau of Public Roads; Charles S. Howe, president Case School of Applied Science, Cleveland, Ohio.

3.45 p. m.

Resolutions committee.

Chairman, Roy D. Chapin, president Hudson Motor Car Co.; secretary, Pyke Johnson, secretary highways committee, National Automobile Chamber of Commerce.

7.30 p. m.

BANQUET.

Mr. Roy D. Chapin, presiding.

Guests of honor.

Hon. John Barton Payne, Secretary of the Interior.

Hon. Charles E. Townsend, United States Senator from Michigan.

SATURDAY, MAY 15, FORENOON SESSION.

10.00 a. m.

General meeting.

(*a*) Reading of the reports and resolutions of the educational subcommittees.

(*b*) Report of the committee on resolutions.

(*c*) Appointment of the permanent committee.

(*d*) General discussion.

12.45 p. m.

Adjournment.

LIST OF THOSE WHO ATTENDED THE CONFERENCE ON HIGHWAY AND HIGHWAY TRANSPORTATION ENGINEERING EDUCATION.

Representatives of Schools of Engineering, etc.

1. A. H. Blanchard, professor of highway engineering and highway transport, University of Michigan, Ann Arbor, Mich., and president National Highway Traffic Association.
2. W. K. Hatt, head of the school of civil engineering, Purdue University, Lafayette, Ind.
3. Emory R. Johnson, dean of the Wharton School of Finance and Commerce, University of Pennsylvania, Philadelphia, Pa.

4. Hector J. Hughes, professor of highway engineering, Harvard Engineering School, Harvard University, Cambridge, Mass.
5. C. J. Tilden, professor of engineering mechanics, Sheffield Scientific School, Yale University, New Haven, Conn.
6. C. E. Ferris, dean of the school of engineering, University of Tennessee, Knoxville, Tenn.
7. T. R. Taliaferro, dean of the school of engineering, State University of Maryland, College Park, Md.
8. R. H. P. Begg, professor of civil engineering, Virginia Polytechnic Institute, Blacksburg, Va.
9. John Weber, associate professor of mechanical engineering, school of engineering, University of Pittsburgh, Pittsburgh, Pa.
10. John R. Lapham, assistant professor civil engineering, college of engineering, George Washington University, Washington, D. C.
11. S. S. Steinberg, assistant professor of civil engineering, school of engineering, State University of Maryland, College Park, Md.
12. Harold D. Hatfield, director of the school of applied science, Howard University, Washington, D. C.
13. A. J. Scullen, department of civil engineering, Catholic University of America, Washington, D. C.

State and County Highway Officers.

1. Paul D. Sargent, chief highway engineer of Maine, and president of American Association of State Highway Officials, Augusta, Me.
2. George H. Diehl, county engineer, Buffalo, N. Y., chairman of the Good Roads Board, A. A. A.
3. W. W. Mack, Delaware Highway Department, Dover, Del.
4. G. P. Coleman, State highway commission, Richmond, Va.

Executive and Managerial Representatives of the Automotive and Tire Industries.

1. Roy D. Chapin, president Hudson Motor Car Co., Detroit, Mich., and vice president of the National Automobile Chamber of Commerce.
2. H. S. Firestone, president Firestone Tire and Rubber Co., Akron, Ohio, representing Rubber Association of America.
3. M. L. Heminway, manager Motor and Accessory Manufacturers' Association, New York, N. Y.
4. E. T. Herbig, National Assoc. of Motor Truck Sales Managers, Wabash, Ind.
5. F. W. Davis, consulting engineer, Pierce-Arrow Motor Car Co., Buffalo, N. Y.
6. W. V. Logan, manager of pneumatic truck tire sales, United States Tire Co., New York, N. Y.
7. R. E. Macduff, Packard Motor Car Co., Washington, D. C.
8. C. S. Pike, Paige Motor Co., Detroit, Mich.
9. C. M. McCreery, Goodyear Tire and Rubber Co., Akron, Ohio.
10. Raymond Beck, Goodrich Tire and Rubber Co., Akron, Ohio.
11. David Thomas, general manager Motor Truck Manufacturers' Association, 33 West Forty-second Street, New York, N. Y.
12. Ernest Farr, director Ship by Truck Bureau, Akron, Ohio.
13. F. G. Whipple, Service Motor Truck Co., Wabash, Ind.
14. A. O. Horrocks, Goodyear Tire and Rubber Co., Akron, Ohio.

Representatives of Automobile and Transportation Associations.

1. Pyke Johnson, secretary highways committee, National Automobile Chamber of Commerce, Washington, D. C.
2. H. R. Cobleigh, secretary Service Division, National Automobile Chamber of Commerce, New York City.
3. M. O. Eldridge, director of roads, American Automobile Association, Washington, D. C.
4. S. M. Williams, president Federal Highway Council, Washington, D. C.
5. H. G. Shirley, secretary Federal Highway Council, Washington, D. C.
6. C. W. Reid, manager transportation bureau, Federal Highway Council, Washington, D. C.

Representatives of Private Firms and of the Automobile Press.

1. A. N. Johnson, consulting highway engineer, Portland Cement Association, Chicago, Ill.
2. Prevost Hubbard, chemical engineer, Asphalt Association, New York, N. Y.
3. Clyde Jennings, managing editor Automotive Industries, New York, N. Y.
4. Paul Wooton, representative of Engineering News Record of New York, N. Y., 610 Colorado Building, Washington, D. C.
5. George A. Ricker, representative Portland Cement Association, Union Trust Building, Washington, D. C.
6. J. F. Witt, care of Witt, Nagle & Rollins Co., Dallas, Tex.

Representatives of Higher Institutions.

1. S. P. Capen, director of the American Council on Education, Washington, D. C.
2. A. F. Woods, president of State University of Maryland, College Park, Md.
3. Charles S. Howe, president of Case School of Applied Science, Cleveland, Ohio.
4. H. M. Rugg, director of technical instruction, Y. M. C. A. schools, New York, N. Y.

Representatives of the Federal Government.

War Department.

1. C. R. Mann, chairman, Advisory Board, War Plans Division, War Department, Washington, D. C.
2. Lieut. Col. J. M. Ritchie, Motor Transport Corps, United States Army, War Department.
3. Capt. R. A. Osmun, Motor Transport Corps, United States Army, War Department, Washington, D. C.
4. E. R. Jackson, Ordnance Department, United States Army, War Department, Washington, D. C.

Council of National Defense.

5. L. L. Robinson, Council of National Defense, Washington, D. C.

Federal Board for Vocational Education.

6. Capt. Frederick O. Smith, Federal Board for Vocational Education, Washington, D. C.
7. Roy Dimmitt, Federal Board for Vocational Education, Atlanta, Ga.

Department of Agriculture.

1. Thomas H. MacDonald, Chief of the Bureau of Public Roads, Department of Agriculture, Washington, D. C.
2. T. Warren Allen, general inspector, Bureau of Public Roads, Department of Agriculture, Washington, D. C.
3. P. St. John Wilson, chief engineer, Bureau of Public Roads, Washington, D. C.
4. E. J. James, assistant chief engineer, Bureau of Public Roads, Washington, D. C.
5. L. J. Hewes, inspector of public roads, Portland, Oreg.
6. A. T. Goldbeck, engineer of tests, Bureau of Public Roads, Washington, D. C.

Department of the Interior.

1. P. P. Claxton, United States Commissioner of Education, Bureau of Education, Washington, D. C.
2. W. T. Bawden, assistant to the Commissioner, specialist in vocational education, Bureau of Education, Washington, D. C.
3. George F. Zook, specialist in higher education, Bureau of Education, Washington, D. C.
4. Chester D. Jarvis, specialist in agricultural education, Bureau of Education, Washington, D. C.
5. Walton C. John, specialist in charge of land-grant college statistics, Bureau of Education, Washington, D. C.
6. John C. Hoyt, assistant chief, water resources branch, Geological Survey, Washington, D. C.
7. Alex Summers, United States Bureau of Education.

Special guests.

1. Hon. John Barton Payne, Secretary of the Interior, Washington, D. C.
2. Hon. Charles E. Townsend, Senator from Michigan, United States Senate, Washington, D. C.
3. Judge J. H. Lowe, N. O. T. R. Association, Kansas City, Mo.
4. A. G. Batchelder, executive chairman, American Automobile Association, Washington, D. C.

THE COMMISSIONER'S ADDRESS OF WELCOME.

GENTLEMEN: This conference has been called at the request of the committee on resolutions of the preliminary conference on highway and highway transport education, held under the auspices of the National Highway Traffic Association at Ann Arbor, Mich., April 15, 1920.

I heartily welcome this large delegation this morning and at the same time I desire to express for the Secretary of the Interior his pleasure in having you meet here to confer on a question which is of great interest to him. He regrets that he can not attend the morning session, but he expects to be present this evening.

This conference is significant because there are brought together at one time the representatives of the various agencies concerned with highway construction and highway transport. Other modes of transportation are also represented at this gathering.

The United States has just entered a new era of highway building, which, if properly encouraged and rightfully managed, will be of the greatest importance in developing the manifold resources of the country. The demand for more and better highways is to a large degree caused by the fact that growing business and agricultural interests are determined to have the best and, in the long run, the cheapest means of transporting goods as well as persons.

States, counties, and townships, for years and decades in the "slough of despond," are awakening, both as the result of their own initiative and because of Federal encouragement to see that the good and permanent highway is one of the first essentials of a sound and progressive policy of economic development.

It has been found that a tax for a well-prepared highway is less of a burden than the age-long and discouraging mud tax which has been one of the greatest drawbacks in rural development everywhere.

The rapidly increasing use of the automobile and the autotruck is an important index of both business and social development. Perhaps the most serious educational question facing the country is that of the rural school. Successful rural education, as exemplified in the modern consolidated school, can not be conducted with a real measure of success unless from each school there radiate from 30 to 50 miles of good roads, over which autobuses rapidly course their way with their loads of children and youth, back and forward from school and home.

The betterment of our roads means the widening of the radius of travel. Those who have been suffering the effects of isolation will receive the vision and education which increased travel and intercommunication always have given.

The more we study our civilization, the more we find it dependent upon the development of transportation in its different forms, and in no small degree upon highway transportation.

The growing demand for well-trained men to carry out scientifically the great highway program ahead of us and for men able to properly develop our highway transport facilities has created a double opportunity for our colleges to serve the country in a most helpful manner by educating broadly and thoroughly the men necessary to do the work.

The conference is charged, therefore, with the responsibility of determining and stating as clearly as possible the needs and the qualifications for trained men. The conference will also assist the college by giving such information as may prove helpful in making the necessary readjustments in the courses of study, and in furthering research in the problems of highways and highway transport.

INTRODUCTORY REMARKS OF F. L. BISHOP

DEAN OF THE SCHOOL OF ENGINEERING, UNIVERSITY OF PITTSBURGH.

The object of this conference is to present clearly to the public, and primarily to the engineering schools, the economic and engineering problems involved in the training of a larger number of highway and transport engineers and some suggestions to the faculties of our engineering schools in regard to the development of courses for the training of these men, such courses to emphasize not only the engineering features, but the economics of highway transport.

The personnel of the conference is such as to command the attention of those interested in the development of our highways and illustrates the modern method of solving educational problems, namely, to bring together the men who are to use the young men trained in our colleges with those to whom is intrusted their education. This results in a clear statement of the type of training required, and at the same time the educator can state the limits which of necessity must always be placed on the training.

Traffic in new countries always follows the waterways. When the pioneers begin to branch from these lines of portage, then begins the development of the highways. There is no more fascinating and interesting subject in the history of civilization than the development and use of highways. The framers of the Constitution of the United

States recognized that transportation and communication were of primary and fundamental importance, if the Union which they were creating was to continue, and made provision for the building of highways known as post roads.

Up to the time of the advent of the railroads there was in this country a notable development of the highways and there still remain some of these, such as the post road connecting Boston and New York, the National Pike from Baltimore to the Ohio River, the Philadelphia-Pittsburgh Pike, etc. Over these highways there flowed from the east over the Allegheny Mountains an enormous amount of traffic, and those sections of the country which were reached by these highways were naturally the earliest to develop.

Railroads were looked upon as substitutes for these highways and for several generations the country lost interest in the development of a national highway system, but the advent of the automobile provided a new means of transportation for passengers and freight, and there immediately arose an insistent demand for better roads. This demand has been constantly increasing and reached a maximum during the war, when our waterways and railroads were inadequate to transport the enormous volume of freight which was necessary in order that our troops might be maintained upon European soil. This traffic, composed largely of motor trucks, destroyed to a considerable extent our existing highways.

The problem then that lies before us is twofold:

First, the economic question involved in highways. It is to this economic study of highways that I would particularly call your attention. The cost of transportation in different countries in 1902 was as follows:[3]

Cost of transportation.

Countries.	Per ton-mile, in cents.	Wages per day.
China	$0.10	$0.10
Japan	.05	.23
Russia	.022	.34
Italy	.024	.26
Austria	.0225	.50
Germany	.0150	.90
France	.0190	.80
England	.0260	1.04
United States	.0069	2.60

Second, the engineering questions involved in the construction of modern highways.

The ever-increasing size of the automobile trucks, with their growing use in wintertime, requires a type of construction for roads not heretofore used. In addition is the necessity for reducing grades, eliminating curves, etc. That the funds which are annually appropriated by the National, State, county, and municipal governments may be properly expended, it is necessary that they be expended under proper engineering supervision. The men for this work must be trained in our engineering schools. Some extraordinary effort must be made to graduate a sufficient number of trained highway engineers from our educational institutions to meet this need.

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[3] **Walker, Guy Morrison. "The Measure of Civilization," p. 110.**

Education always reacts to the needs of the country, and as a result we may look to the engineering schools to modify their courses in the manner suggested by the conference. This will be much easier for the engineering than for the economic phases of the question.

There is an immense number of definite research problems in highway transport quite apart from what are usually considered engineering problems. Most of these problems must be solved by engineers trained in the economics of highway transport.

THE WIDENING FIELD FOR ENGINEERS IN HIGHWAY IMPROVEMENT AND THEIR TRAINING FOR THE FIELD.

By Thomas H. MacDonald, Chief of the Bureau of Public Roads, United States Department of Agriculture.

Any critical period in which production, inclusive of the problems of distribution and transportation, becomes the paramount issue, awakens the public to the importance of the engineer's work, and directs its attention to the necessity for a greater supply of men trained in the various phases of the engineering profession. Just now the interest of the public must extend further. It must examine into the condition in which the educational institutions now find themselves, for the purpose of providing proper support, funds, and enlarged facilities. There must be a recognition of the fact that in the past these institutions have exerted profound influence to advance engineering knowledge, and that there is now a demand for a greater number of technically trained men each year than these institutions can possibly prepare. There must be further recognition of the fact that a much closer correlation of the interests of those responsible for the instruction of engineers in the planning of engineering courses and of those who demand and will absorb the services of the men as they leave the institutions is not only desirable but high necessary. In this connection it is enlightening to follow the deve opment of engineering courses in American colleges and univers ties. So many of our experiences occur in cycles that such a stud may be regarded as forecasting the immediate future of engineerin education, and from this viewpoint the history of this developmen rightfully lends encouragement and forms a stable foundation for an optimistic spirit in this conference in its consideration of the problem of supplying trained men to fill the demand for the field of highway development.

Undoubtedly some of the conditions which engineering educators are now feeling are the gravest within the period of their connection with educational institutions. True, also, is the lack of a sufficient number of trained men in all of the different branches of the profession and in all of its different grades. Still, these are public questions, and in the past it has always seemed to require grave issues to direct the attention of the American people toward the causes and to stimulate their activity in removing these causes and providing the proper relief. So we may have faith that satisfactory progress will be made in overcoming the adverse conditions which exist to-day, if proper attention is given these matters by those in a position to give the public correct information.

The first technical school—Rensselaer Polytechnic Institute—was founded in 1824. This was the only school of its kind for nearly a quarter of a century, until 1847, when Harvard established the Lawrence Scientific School and Yale the Sheffield Scientific School. The University of Michigan also established the same year a course in civil engineering. Until the Civil War there were no other schools of this character. In 1862, however, Congress enacted the Morrill Land Grant Act providing, through grants of public lands, for the endowment of schools to teach agriculture and the mechanic arts. This act immediately stimulated the establishment of technical schools, and from a total of 4 in 1860 the number increased to 70 by 1872 and to 85 by 1880. There are now 126 institutions providing engineering courses, 46 of which are land-grant colleges operating under the provisions of the Morrill Land Grant Act. In addition to these, there are 43 other institutions that give some engineering instruction.

In the 5 years, 1911 to 1915, it is estimated that 17,000 engineers graduated, an average rate of 3,400 per year. During the previous decade the average number graduated per year was approximately 2,100. The increase in the number of graduates per year during the present period will not be so apparent until the graduation of the classes which are in their freshman year now. Just what this increase will be is extremely difficult to estimate because of the high percentage of students who dropped out of college between their freshman and senior years. Based on past experience of some of the leading engineering schools, this total is estimated at not more than 5.500. It must be remembered that even this number of engineering graduates will not be available until 1923, that the number is likely to be much smaller for this year and the two years following, and that these men will be claimed by all phases of engineering and particularly by the industries.

The four general branches of engineering—civil, mechanical, mining, and electrical—have developed a large number of specialized phases, training in which is offered the student at the different colleges. As illustrative of this tendency, instruction is given in the following, as well as many other fields of engineering: Chemical, sanitary, metallurgical, railroad, marine, cement, electro-chemical, textile, automobile, aeronautical, ceramic, highway, agricultural, and engineering administration. One of the best-known schools offers at least 15 specialized courses.

It will be noted that the greater number of these specialized courses have a direct relationship to the industries, and in this fact apparently lies the crux of the present situation as far as the future supply of highway engineers for the public service is concerned.

As was true after the Civil War, so now a great demand has come suddenly for large numbers of technically trained men, and it must be remembered that the high-school graduate is, under the plan of education generally followed, four years distant from his availability to meet the demands. Industry of all classes has been so tremendously stimulated by the demand for increased industrial production and so well supported by increased prices that the possibilities for advancement in the industrial engineering fields offered the young man when choosing his college course are alluring. Every organization is naturally selfish in its desire to secure the best men, and the industries should not be accused of a greater degree of selfishness than other organizations who require men technically trained, but industry has been more alert in offering a tempting field than the public and semipublic organizations, such as the railroads, Federal and State governmental engineering departments, and like organizations.

It seems well within the province of this conference, therefore, which is interested in the relationship of the engineer to the highway program and the supplying of technically trained men to meet the present and increasing demands in this field, to take account of the widening field of opportunity offered the man who intends to follow some engineering profession to plan the proper methods by which a just and sufficient proportion of young men may be constantly drawn into the highway field, and to consider modification of present methods or adoption of new methods to make the engineering student or graduate more quickly useful and more immediately available for responsible positions.

ENLARGEMENT OF HIGHWAY PROGRAM.

It is not necessary to analyze the causes for the enlargement of the highway program. It is sufficient for the purposes of this conference to point out that the present sentiment for highway improvement is founded upon the sure basis of a direct interest in highway improvement on the part of a very considerable percentage of our entire population, and that percentage is rapidly increasing. This has been brought about, as is well known, by the rapid increase in the use of the passenger car and the more recent freight-carrying motor truck. The expenditures for highway improvement are increasing at a remarkable rate, as shown by the following schedule.

Total expenditures for roads, by years, in the United States.

Year.	Total.
1916	$272,634,413
1917	279,915,332
1918	286,098,192
1919 (estimated)	303,670,105
1920 (estimated available for expenditure)	783,000,000

The tremendous increase from the total estimated expenditure in 1919 of approximately 303 millions of dollars to the estimated amount available for the present year of more than 600 millions is in itself indicative of the widening field of opportunity for the technically trained engineer or the young man who is seeking to choose a profession offering wide opportunity. It is, of course, certain that the expenditures this year will fall under the estimated funds available, due to the economic handicaps which have been placed upon production of highways through the lack of railway transportation, material supplies, contractors' organizations, and labor, as well as the developing limitations of credit. This expenditure, because of these handicaps, may equal no more than 50 per cent of the amounts appropriated or authorized by the public; yet, even so, the supply of engineers necessary to carry out this program averages this year, from estimates furnished by the State highway departments of 36 States, 23 per cent less than the State requirements, which, undoubtedly, means that the more local subdivisions, such as counties, towns, and cities, will show a considerably greater per centage of deficiency in the engineering forces reasonably required, because the larger engineering organizations, including the industries, have recruited many men from these sources.

EXTENSION OF ENGINEERING CONTROL OF EXPENDITURES.

While the greatly increased sums for highway improvement are indicative of the greater field for engineers, the increasing importance of the engineer in relation to the highway improvement program is, perhaps, best illustrated by the progress which has been made recently in bringing highway expenditures under engineering control. The following article shows the rapid progress which is being made in this direction:

Highway expenditures.

Year.	Under control of State highway departments.	Locally but not under State highway departments.	Per cent under highway departments control.
1916	$74,495,554	$198,138,559	27
1917	98,179,332	181,736,000	35
1918	117,285,268	168,812,925	41
1919	[1] 133,670,105	160,000,000	46
1920	[2] 633,000,000	150,000,000	81

[1] Estimated.

Estimated available.

If through the economic limitations before noted the expenditures for 1920 are limited to no more than 50 per cent of the funds available through State and Federal sources, and the local expenditures are maintained at the estimated figure, the proportion of funds spent under engineering control will still be more than 60 per cent of the total funds. The tendency of the times to place all expenditures under engineering control is, however, much more correctly shown by the 81 per cent than by any smaller percentage. This tendency is keeping pace with the growth in the demand for improved highways and the financial support for this purpose. The fact of the growth of engineering control is further emphasized by the large mileage of highways built each year, even during the past three years while highway construction has been so seriously curtailed. The estimates for highways of all types built under engineering control are shown in the following schedule:

Total mileages built by State highway departments under engineering control.

Year.	Miles.	Total to date.	Per cent of total mileage of nation.
1916	16,160	68,937	2.8
1917	11,996	80,933	3.2
1918	11,944	92,877	3.7

There is a total of approximately 214,000 miles of highways the State systems which have been chosen for improvement und State direction, or approximately 8½ per cent of the total mileage the Nation. The State systems vary from 1 to 17 per cent of tl total mileage of the several States. Perhaps the most indicati figure as pointing the way to the future importance of the State and Federal departments is shown by the increase in the mileage of highways maintained under engineering control, as shown by the following schedule:

Total miles maintained by State highway departments.

Year.	Mileage.	Per cent of total mileage of nation.
1916	75,311	3.0
1917	181,391	7.3
1918	203,556	8.1

From this evidence it is apparent, then, that the field for engineers in highway improvement is rapidly widening, because of the demands for highway improvement followed by the appropriation of large sums for this purpose, and that the prevailing tendency of the times is to bring the construction and maintenance of highway improvements under engineering jurisdiction. Already some of the State highway departments are planning for the definite assumption of engineering control of roads which are of no more than local importance in the State. In other words, we are progressing rapidly from a highly decentralized control of highways to definitely organized systems of engineering control of all the highways, from the most important to those serving only communities. From this fact follows this question: Whose responsibility shall it be to direct the attention of young men toward this field and induce them to follow highway engineering as a profession when so many other splendid opportunities are open?

SUPPLYING THE DEMAND FOR TRAINED MEN.

Up to the present time little or no attention has been given by the public or semipublic organizations which need large numbers of engineers toward directing young men into their respective fields. Apparently the supply has been equal to the demand, and little concern has been felt. This fact is now changed. The best illustration is the status of railroad engineering, from which students and graduates have turned with decision. It is reported that one well-known special railway engineering course has a total of four students, all foreigners.

But consider the case of the educational institutions which we are calling upon to train engineers. Under war conditions the teaching staffs were badly disorganized. Last year there was a tremendous influx of new students, and the appropriations have in general been far less than the enlarged needs. Salary budgets have not been revised to meet the competition of industrial engineering organizations, with the consequent loss of very many of the best qualified professors and instructors.

The instructor who, during prewar time, has taught a specialized course in some particular phase of engineering, such as highway engineering, is called upon to go into general teaching or to spread his activities over a far greater number of students than he can possibly give proper attention to. Educational institutions have necessarily given up their building programs in order to hold their teaching staff together while the additional room is so seriously needed. Our institutions are suffering from an unforeseen expansion which they can not capitalize—to provide funds, as in the case of the industries—and a condition has resulted which the public must understand and provide for. That our educational institutions can not be neglected is a fundamental creed with the greater part of our citizenship, but the present conditions must be understood and given the proper publicity. It may be remarked in passing that this general condition is not peculiar to the institutions of higher education, but extends all down through the whole educational system.

It has been noted that inroads have been made upon the supply of engineers by industries, but it should be added that the State highway departments have responded much more quickly than has the Federal Government or the management of the educational institutions or the railroads, to the necessity of increased compensation to the engineers. The Reclassification Commission, which was appointed to make a study of conditions within the Federal Government and make salary recommendations for all Federal employees, has classified the engineering service of the Government into seven divisions, five of professional and two of lower grades. The following schedule shows the comparison of salaries in the Bureau of Public Roads in 1919 as compared with those in various States and those recommended by the Reclassification Commission, grouped under these several divisions.

Comparison of salaries in the Engineering Service.

Rank.	Bureau of Public Roads, both office and field, exclusive of bonus.			Compensation by various States,[1] reclassification basis.			Recommended by Reclassification Commission.		
	Minimum.	Average.	Maximum.	Minimum.	Average.	Maximum.	Minimum.	Average.	Maximum.
Senior	$4,500	$4,500	$4,500	$5,000	$7,150	$10,000	....	....	....
Engineer	2,500	3,641	4,000	2,820	4,300	5,000	$5,000	$4,140	$5,040
Associate	2,280	2,656	3,240	2,200	4,100	6,000	3,240	3,540	3,840
Assistant	1,560	2,141	3,000	2,100	2,635	3,300	2,400	2,700	3,000
Junior	950	1,537	2,100	900	1,835	3,060	1,800	1,980	2,160
Civil engineer aid	720	860	1,080	800	1,043	2,080	1,200	1,500	1,800
Junior engineer aid	480	767	1,080	480	915	1,500	840	1,020	1,200
Copyist	540	760	1,080	....	1,200	....	1,080	1,170	1,260

[1] Massachusetts, Wisconsin, New York, Delaware, Maryland, Michigan, Pennsylvania, California, Texas, Iowa, Illinois, Indiana, New Jersey, Ohio—14 States.

From these it will be noted that in the 14 typical States having well-organized highway departments the salaries are higher than those recommended by the reclassification commission, and very much higher than those now paid by the Bureau of Public Roads. But even this schedule is lower than the recommendations of the American Association of Engineers or the Engineering Council. The recommendations of this association are shown in the following schedule:

Salaries recommended.

Rank.	Minimum.	Maximum.
Senior	$8,000	$15,000
Engineer	4,000	10,000
Associate	3,600	5,000
Assistant	2,400	4,000
Junior	1,800	2,400
Engineer aid draftsman	1,800	2,400
Junior engineer aid	1,200	1,500
Copyist	1,800	2,400

From this evidence it is clear that in order to interest young men in highway engineering and in order to secure and retain the engineering staffs necessary to provide proper training in the educational institutions in this profession, the salaries now paid to engineers must be very materially increased.

As indicating the number of engineers that are now engaged in highway work, there is a total of 312 employed by the Bureau of Public Roads at the Washington headquarters and in the field. Thirty-six States report the following totals:

Number employed by State highway departments	3, 939
Number with county highway organizations	1, 909
Number with city organizations	1, 200
Highway engineers outside of above classes	519

These totals are divided into classes, as follows:

Those above division engineer or similar grade	381
Division engineers or similar grade	903
Resident engineers or similar grade	1, 995
Grade below resident engineer	3, 952
Unclassified	

It is not presumed that these figures are absolutely correct, but they are indicative of the large number of engineers that are needed in the highway field. The additions which will be required for the next decade are estimated to average from 9 to 12 per cent per year, but it is more than probable that this percentage is far short of the actual percentage that will be required.

RESPONSIBILITY OF ENGINEERING ORGANIZATIONS.

It can hardly be expected that young men in sufficient numbers will enter the field of highway engineering unless they have knowledge of the field ahead, nor is it fair to leave the colleges unaided to develop these men as fast as they will be required. There is a large duty in both these respects which must be assumed by the engineering organizations who wish to use these men. Reference is made particularly to the Federal Bureau of Public Roads, the State highway departments, and similar organizations. Furthermore, our ideals of engineering education were brought into this country from abroad, and the teaching of applied science has in general been founded upon the theory that the student should first learn the theory and later the application. Undoubtedly a canvass of the executive in charge of the highway organizations of to-day will bring out the fact that they have fewer problems of theory and design to meet than of production, organization, and supervision.

It is the duty of these executives to lay before the heads of the educational institutions the necessity for broader training of highway engineers along the lines of the economics of highway engineering as well as in some of the humanities. Every highway department comes closely in contact with the public and has need of men who not only understand the problems underlying the administration of highway organizations and of highway development, but who can present these matters convincingly to the public, without whose favorable support the work of the highway organization can not be successful. The lack of engineers who possess this training has been one of the most serious handicaps to the highway organization.

Fortunately, many highway departments have already played an active part in the development of highway engineering as a profession. To Dean Shaler, of the Lawrence Scientific School of Harvard University, may be credited a very large share in the early teaching and stimulation of real engineering as applied to highway construction and maintenance. The influence of the Massachusetts Highway Commission, of which he was one of the first members, has had a very considerable influence in the development of highway engineering to the position which it occupies to-day. This fact seems indicative of the responsibilities which devolve upon the highway departments of other States in the future. There must be a close coordination and cooperation between the highway organizations and the educational institutions, much closer than has prevailed in the past. As concrete examples of the possibilities for advancement which are inherent in such a relationship are the following suggestions:

First, if the college semesters can be so arranged that students in the various years of the college courses can be placed in appropriate positions for the summer work with the highway organizations. By advancement, from year to year, to positions of greater responsibility, they not only are better prepared to meet the problems which are now paramount with highway executives because of their knowledge of the organization in all of the different classes, but they will more surely connect up their theory with its practical applications. Thus, both the highway departments and the educational institutions will function better in producing capable engineers.

Second, such a relationship will awaken from the start an interest in the student in highway engineering which will prevent his dropping out in his undergraduate years or turning to other courses.

Third, a close contact of the teaching staff with the highway organizations will prove of great mutual benefit.

Fourth, the engineering organizations should assume responsibilities for lectures and other services in the classroom that the students may be constantly brought in connection with the active work.

Fifth, the research work which is of the utmost importance and necessary to every engineering organization, should be closely coupled with the work along similar lines of the educational institutions.

Finally, in the production of highway engineers, there is nothing more valuable than the short courses conducted annually which should be a product of the educational institutions and the highway organizations. It is impossible to cram into four years of a student's life all of the technical information that he will need. It is probable there is too much of an attempt toward this end now, and that the more highly specialized subjects should be left for postgraduate study. The short courses should by all means be developed, and could well be made a part of the year's work for the highway engineering organizations to attend for at least a short period of instruction annually.

These short courses should be of two general classes; first, those for the instruction of graduate engineers for the purpose of keeping them constantly in touch with the rapid developments in the field of highway engineering and for the purpose of preparing them for highly specialized technical work, especially along research lines, and second, those for the instruction along more popular lines for the benefit of public officials or those occupying positions of lesser technical importance in the organization. Practically all highway organizations work through or with public officials who are not technically trained, and who may be impatient of technical limitations and theoretical niceties. The short course along more popular lines offers the surest way to connect in a harmonious relationship the theoretical and practical minds. The great success which has been attained by many short courses of this latter character has accentuated their importance as a means of bringing highway departments, public officials, contractors, and through them the public in general into closer cooperation, which is the key to the solution of the most difficult problems of highway administration.

THE NEED FOR BETTER TRAINED MEN IN HIGHWAY ENGINEERING AND HIGHWAY TRANSPORT ENGINEERING.

By ROY D. CHAPIN, President of the Hudson Motor Car Co., Detroit, and Vice President of the National Automobile Chamber of Commerce.

No more far-reaching influence has made itself felt in education in modern years than the World War. Hardly had the struggle begun when the importance of training in practical work came to be clearly understood, and at once there was a demand for skilled men such as was beyond anything in our past history.

Now that peace has returned, we find that the colleges of the United States are all engaged in getting their ships into order after the storm. The war demonstrated that courses which had served while the sailing was smooth were not of the greatest efficiency, and to-day there is a movement throughout the land to revise curricula and to shape courses in study so that they will meet with the particular needs of the student who has planned to go into business life.

As one of the great subjects which was developed by the war, and which must be continued in our colleges in the future if the full effects of economic transportation are to be realized, we have highway transportation. Before America's participation the motor truck had been looked upon as a vehicle for use in intracity communication but had not been seriously considered as a unit in transportation. The demands of war changed that viewpoint almost overnight. As the railroads became congested there came an insistent demand for supplementary transportation, and the motor truck answered the call. Hundreds of thousands of men were suddenly drafted into service as motor-truck operators, convoy leaders, and mechanics. Across the seas the arrival of hundreds of motor trucks loaded with soldiers and materials saved the cause of the Allies at Verdun. In this country the motor truck became one of the three great factors in the trinity of transportation over the highways, waterways, and railways. Perhaps the first evidence of this which was seen were long trains of motor-truck convoys traveling from inland ports to Baltimore to handle emergency war supplies which the railroads were unable to take care of. The next step was the sudden coming into life of rural motor express lines. Every ounce of food was needed.

The rural express went from farm to farm, picked up the produce for which the farmer had neither labor nor material to transport, and swelled the volume of food for those on this side as well as on the other.

Intercity fleet lines came into existence. Where in the past years it had been customary for the roads to be used for a radius for some 8 or 9 miles daily, since the horse was limited to that extent, operators driving the motor units of transportation found that they could take thousands of tons of supplies from city to city, with the result that our highways became a network of transportation systems all engaged in supplementing the traffic haulage of the railroads.

The day of fighting is passed, but from this intensive effort has come a permanent addition to the transportation of the country, whether it be freight or passenger in nature. No longer is the motor vehicle looked upon only as an instrument of pleasure. Its place in the economic fabric of the country has become fully understood, and its future is one which must surely have a tremendous far-reaching influence in the lives of the people of the country.

To show how far we have progressed it is only necessary to make a statement that thirty million people ride in automobiles in the United States each day in the year. To some these figures will seem extravagant, but we have practically 8,000,000 motor vehicles in the United States to-day, and we are adding to that number by hundreds of thousands each month. It is not too much to say that each machine carries four passengers a day. To supplement this, we may note that last year 1,000,000,000 tons of freight were hauled by the motor trucks of the country, as against 90,000,000 tons carried on the Great Lakes and the Mississippi and 2,504,000,000 moved by the railroads.

Now, in all of this great, new, transportation development there appears a pressing need for highway transportation engineers, men skilled in production and operation of these transportation units. It is necessary that we should have these men by the thousands if we are to save waste in this great new development and to secure the maximum benefit which we should receive.

In order to handle this subject intelligently it is necessary that it should be coordinated with other forms of transportation, since only through coordination can we hope to obtain the greatest efficiency in the use of each unit. We know that the motor truck is not capable to-day of competing with the railroad in the long haul. We know that under certain limitations it can serve to relieve the railroads. We should have men trained in the analysis of these problems, able to tell us what the definite economic limitations are.

With the increasing use of highway transportation our traffic problems are becoming acute. In the larger cities as well as in the smaller we find a growing need for definite, well-laid-out plans for the operation of motor vehicles.

There is a further need for the close cooperation between the men who are using the highways and the men who are building them. Their problems in many subjects are mutual. The highway transportation engineer brings to the knowledge of the highway engineer a vision as to the future use of highways. He knows something of the trend of production and of the character and type of vehicles which will travel over the roads of the future.

His knowledge should be of definite value to the highway engineer since, in the last analysis, road expenditure can only be justified by the volume of the traffic which goes over the completed highways. It is not enough to say that we will build a road. We should know what the future traffic will be once that road is completed, and on our vision of the future we should determine the type of highway which is to be built. In other words, I should say that road building is now an economic problem first of all. Location of the highway should be undertaken only with due respect to the tonnage which may be developed along the road or to the character of passenger travel which may go that way.

There are hundreds of millions of dollars available for road building in the United States to-day. The people of the country have shown their belief in the future of highway transportation by the readiness with which they have voted these large sums. Perhaps no other issue before the country meets with the enthusiastic reception which this one does. It is only necessary now that in the future conduct of our highway program we shall seek to avoid any waste and to give to the taxpayer a dollar of value for every dollar expended. The roads which we build must last for the life of the bond voted to cover the cost of their construction. If they do not, then the future would see a reaction against road construction which is unthinkable.

The only way in which this waste can be avoided is through the treatment of this subject as one which requires highly trained men. There must always be waste when the expenditure of money is left in the hands of men who are selected to perform that function by reason of political patronage rather than their trained knowledge.

We must go further. There is an imperative need for the widest kind of research work. I doubt if there is any man in the United States, skilled though he may be, who can define what character of road should be constructed to withstand traffic 10 years from now The tremendous growth of motor transportation has outstripped our scientific knowledge just as it has outstripped our legal procedure, even administration procedure in our automobile factories in some instances

It is time now that we checked up on the work which we are doing. We should not proceed to spend these hundreds of millions of dollars without knowing in what direction we are going or what results we are to obtain. The colleges and schools should heed this well, as it is the peoples' money which builds the roads, and it is the people who support the schools and colleges and who are vitally interested in both of these subjects. These problems can be solved and our colleges should aid their solution by the institution of broad courses in highway engineering, increased facilities for research, and a broadcast movement to acquaint the public with the high importance of skilled men in this task.

Turning to the transportation phase of my subject, I have intimated that the enormous development in motor transportation has brought about a need for trained men in all of the phases of highway transportation from the department of research and design down to the operator on the road. Glancing over the field it will be found that trained men are lacking. We have not simply had the time as yet to develop them, and we must rely upon our colleges to undertake this task.

It is true in the automobile industry as it is in other industries that, whenever a man is able to perform his duties well, salary becomes a secondary matter from the standpoint of the manufacturer. There is an unlimited field for the ambitious man properly trained who enters the automobile industry.

The subject is a popular one. It takes to itself all the glamour and romance which in another day and another generation led the student to take up the subject of railroad transportation. The boy who goes into the field of highway transportation, whether he goes in as engaged in the production and use of the vehicle or as one engaged in the construction of the road, becomes an intimate part of the life not only of his community but of his State and of the Nation. He is doing more than earning a mere living. He is making it possible for others to obtain more from life, since upon the adequacy of our transportation facilities rests in a large measure the breadth of life of all of us.

The subject is one which is bound to increase in importance. There are 8,000,000 automobiles in use in the United States to-day. Each year sees the number increasing very greatly. Except in Europe the use of the motor vehicle has been largely restricted in other countries. Lack of appreciation, lack of funds, and lack of highways have been responsible. To-day we see a changed condition abroad. More and more automobiles are being demanded from this country. Last year our export shows an increase of 79 per cent. In the years to come we may expect to see broad highways driven into the heart of old Europe, Asia, and Africa, opening potential resources almost beyond the vision of any of us present. All this means that there will be an ever-increasing field of usefulness, both in the engineering and highway transportation fields.

The subject is one which reaches so closely into the life of the individual that its importance should be impressed upon him at the earliest stage. There is a place for the study in the kindergarten. No child should go through the primary schools without receiving a course in safety first, which will give him a full understanding of the rules of the road whether he live in the city or in the country.

For the student whose education must be limited there should be vocational training which will fit him for work as a skilled mechanic in a factory, as a motor-truck operator or chauffeur in the field, or for any one of the number of other branches afforded by the two subjects under discussion.

When we go to the colleges there should be definite outlines which will equip men for the highest type of employment in these fields. In some cases these courses will be found in the engineering schools, but there will always be a need for a number of men trained in business administration, salesmanship, and advertising who should have more than a vague understanding of the specialized automobile field.

Special degrees should be given in these subjects by our colleges. The reason is not hard to find. Highway engineering is as important a branch of engineering as is any other specialized form, such as railway engineering. Highway transportation will require more men than railroading.

The task ahead is a large one. It is one of sufficient importance to engage the attention of leaders in the two fields in the United States. The national conference on this subject called by Dr. Claxton, Commissioner of Education, is a milestone in educational progress in the United States which the students of the future will look back to as the beginning of a new era in education of most far-reaching importance to themselves and to their children.

WHAT ATTITUDE SHOULD TECHNICAL SCHOOLS TAKE TOWARD THE DEMAND FOR TRAINING IN A NEW PROFESSIONAL SPECIALTY?

By Samuel P. Capen, Director of the American Council on Education.

One of the striking facts in the social evolution of the last 50 years has been the development of scores of professional specialties. Up to the time of the Civil War there were three commonly recognized professions—theology, law, and medicine. The occupational statistician of to-day has a long professional category. In it most of us would find callings listed with whose very existence we are unfamiliar. Apparently this process of subdividing the field of expert service is going to continue into an indefinite future.

The future historian of higher education in America will note that, as these professional specialties have developed, schools and colleges have devised courses to train for them. But training always lags behind the professional demand. Engineering, for example, was a well-established calling before engineering curricula were offered by higher institutions. It is within the memory of persons still young that colleges of journalism or of business administration have been founded. Nevertheless, perhaps one of the most extraordinary phenomena in the recent evolution of higher education has been the segmentation of universities into what is now a bewildering number of professional schools and departments.

In the case of engineering, the development to which I have just alluded long ago entered upon a secondary stage. When American universities first offered courses in engineering the term engineering designated a single unified profession. One was trained to be an engineer as one was trained to be a lawyer or a doctor. Indeed, the calling hardly had professional status. The subjects which an engineer was expected to know scarcely furnished the substance of a single curriculum. In a very short time, however, specialties began to split off inside of the profession of engineering itself. This development was reflected in the offerings of engineering colleges. The training offered to prospective engineers was subdivided again and again until the student was no longer a student of engineering, but a student of mechanical engineering, or of production engineering, or of railroad engineering, or of some other engineering specialty.

Now, I believe that certain of the most significant movements in higher education in the last 10 years have had their source in the development that has taken place in the field of engineering training. They have there had their conspicuous testing and application also. The lessons which the student of education has learned from observing the recent tendencies in engineering education must color his whole thinking with respect to the general educational problems of the day. It may, therefore, be worth while to dwell for a moment on these matters. I believe, moreover, that they have a peculiar bearing on the purpose of this conference.

The tendency which I have mentioned, to offer a separate and somewhat highly specialized training to the civil engineer, a different type of training to the chemical engineer, another still to the electrical engineer, and so on, reached its height just before the war. Hardly half a dozen years ago a countertendency began to make itself felt. There was a sharp reaction away from extreme specialization. Some few engineering schools began gradually to return to a unified fundamental course required of all students. This common course of instruction occupied in some institutions a year, in others two years. Gradually it was extended to cover the larger portion of the four-year course. When I joined the Bureau of Education some six years ago one of the questions that was being hotly debated was, At what point in the course should engineering schools encourage professional specialization?

Many feared the rehabilitation of the old general course, because they believed instruction would then be too theoretical. This danger appears to have been obviated, however, by the various plans that have been worked out in the last few years which enable students to combine from the very beginning their theoretical training with practical experience in engineering undertakings.

The new doctrine received its classic presentation in Dr. Mann's report on engineering education published in 1918. Since then the United States has passed through an experience which has been particularly rich in suggestions to the engineer and to those concerned with the organization of engineering education. If one who is entirely innocent of a professional knowledge of engineering may hazard an opinion, I should say that the stupendous engineering experiences of the war have borne out the propositions set forth in the Mann report. I do not know how far the engineering schools of the country have attempted to recast their work along the lines indicated in that report and indorsed by the special committee of the Society for the Promotion of Engineering Education. I judge, however, that the principles stated therein have for the most part been accepted.

To the lay observer, therefore, it would seem as if we were on the threshold of a new development of engineering schools. The characteristics of this development, if I apprehend it rightly, may be summarized under three heads:

1. It will be the primary task of the engineering schools to teach the fundamental principles of engineering and its basic sciences. Engineering is, after all, not a subject, not a profession, but a method. It is, in a word, the method of science applied in the processes of design, production, and distribution. Indeed it is the fact that it is fundamentally a method, applicable to a large variety of different activities, that accounts for the growth of the numerous engineerin specialties that now exist.

2. In the second place, engineering schools will offer at the ver end of the regular undergraduate courses or in postgraduate course opportunities for specialization in one or more of the many branche of engineering.

3. Thirdly, those technical specialties which any individual school will cultivate will be determined in part by its location and in part by its facilities.

In very self-defense the schools must take a course substantially like this. There is no end to the demand for new types of specialized training. For a study which I made in 1915 I counted 14 different kinds of engineering curricula offered by the leading engineering colleges. In the last five years I venture to say that the number has doubled. If my interpretation of the essential character of engineering education is correct, it might easily be doubled again in the next decade. It is clear that no university system will stand the strain of this kind of a demand. Moreover, the experience both of industry and of the persons in charge of essential war operations tends to bear out the contention that the important thing for the schools to give is the general groundwork of engineering training. Particular specialties may for the most part be learned either in post-graduate courses or in actual practice in the field.

Now, if my conclusions are correct they have a very definite bearing on the end and purposes of this conference. The gentlemen who are here assembled have come together to consider what the schools shall do in the face of a large new demand for specialized training. Shall all the engineering schools in the country begin at once to offer courses in highway engineering or in some other phase of highway transportation? Shall this conference outline one or more curricula which are to be urged upon the schools for their adoption?

In my judgment neither of these things should happen. I should regard it as very unfortunate if this conference urged all the engineering schools in the country to offer specialized courses in highway engineering. On the other hand, I am convinced that some institutions should provide special training in those relatively new branches of engineering which we are discussing. This provision should be primarily for advanced students. Being without technical engineering knowledge, as I have before confessed, I should not venture to say at exactly what point in a four-year course it should begin. That is a matter for the schools themselves to determine. The institutions in which organized work of this character should be, I believe, are those situated in the most favorable locations and possessed of appropriate facilities.

I do not minimize the enormous numerical demand for persons with technical training to engage in the construction of highways. A large percentage of those needed for this great national undertaking will not have to have the highest kind of training or professional skill. The institutions which devote themselves to the development of highway engineering and transportation engineering may appropriately establish extension courses or special courses shorter than the regular engineering curricula for the training of men not of the highest professional grade.

Obviously another large need in connection with this new development is the need for research. This is peculiarly the task of the higher scientific institutions. In short, then, it seems to me probable that a considerable number of engineering schools should undertake the definite exploitation of this large new industry. Their cultivation of the field should include research, the training of a certain number of highly trained specialists, and the training by means of courses not of full professional grade of many men for subordinate positions.

I believe that it would for the present be unwise to encourage more than one institution in a State to devote itself to this field in a comprehensive way. In those States which are fortunate, or unfortunate, enough to possess both a State university and a separate college of agriculture and mechanic arts, only one of these institutions should at the present time commit itself to this task. The decision as to which of the two should undertake it ought to be made by joint agreement.

I should like to make one last point. It is this: I distrust the ready-made curriculum. Dr. Claxton reminded me the other day of a saying of Prof. Rein's. Rein likens a course of study made by one person for the use of somebody else to a wax nose. It looks all right but it doesn't function. The vital thing, as the war experience again has shown us, is a definition of the ends and objects of teaching. Applied to a technical specialty, whether of high or low grade, this means job analysis. The most useful and stimulating document that can be put before persons conducting any kind of vocational or professional training is a definition of the problems and duties which their students will have to meet when called upon to practice the vocations for which they are being trained. You gentlemen who are here assembled can, I believe, make the most useful contribution to the schools if you will define the tasks which the highway engineer and the transportation engineer will have to perform and the particular engineering problems which they will have to solve. The rest may safely be left to the schools.

THE CURRICULA IN HIGHWAY ENGINEERING AND TRANSPORTATION.

By WALTON C. JOHN, Specialist in Charge of Land-Grant College Statistics, Bureau of Education.

Never before has technological education been so important in the life of the Nation as it has been during the last decade. It has taken the war, however, to show the people of the United States that the well-trained engineer is the man who stands back of nearly every material project of importance that is being conducted on any large scale, and to-day we bear witness to the fact that the ultimate solution of the great problems of highway and highway transportation development rests largely in the hands of the college-trained engineer.

The Bureau of Education, by means of different investigations, has ascertained that highway constructors and administrators, with few exceptions, are seeking for at least twice as many trained engineers and other men as have been needed in the past. At the same time greater emphasis is being laid upon the character of the education and training that these men need.

In the words of Prof. Gordon Vernon Skelton, of Oregon State Agricultural College, "there are fewer lines of public endeavor where more money is being spent and where a higher degree of technical skill and training is required than in the field of highway engineering."

At present there is a greater demand for nearly all types of engineers than before the war. President Lovett, of the Union Pacific Railroad, has recently pointed out that the railroads must expend nearly a billion dollars annually for new railroads and for the repairs made necessary by the forced neglect of these vast properties during the recent war period. Thus there will be an increasing demand for railroad civil engineers in addition to the greater demands for highway engineers. This condition of affairs places an unusually heavy burden upon the engineering colleges of the country. It will be the duty of this conference to ascertain as definitely as possible the extent of this burden.

THE COLLEGES OF ENGINEERING AND THE HIGHWAY ENGINEERING PROBLEM.

One hundred and fifty universities and colleges in the United States are offering one or more subjects in the various branches of the engineering profession. Of these institutions, 111 give courses in one or more subjects in highway construction. These institutions include the colleges and schools of engineering in 65 State universities, including colleges of agriculture and the mechanic arts, 32 large privately endowed universities and colleges, and 14 smaller colleges. In at least 15 of the larger engineering colleges curricula are offered which include an option in highway engineering. These options usually consist of from two to five subjects treating on specific problems of road construction.

The colleges of engineering are working out the problems of highway engineering from four different standpoints: *First*, by means of the regular four-year civil engineering curricula leading to the degree of bachelor of science. *Second*, by means of the short, special, and extension courses which may vary in length from a few days or weeks to two-year courses in which road building is given practical consideration. These courses attract the more advanced type of farmer and young men of the rural districts who are not prepared to carry on collegiate work. These courses are calculated to give in the shortest time possible the rudiments of highway construction and repair, and later serve to stimulate a sentiment in favor of high-grade road construction in the counties and districts from which these men come. *Third*, by mutual cooperation of State and county highway departments in using the testing laboratories in the engineering colleges and engineering experiment stations. *Fourth*, by means of graduate work and research in highway engineering problems.

TYPICAL HIGHWAY ENGINEERING CURRICULA.

The typical highway engineering curricula of to-day are composed of a suitable grouping of foundation and supporting subjects in the humanities and the pure sciences, combined with a larger grouping of engineering or technical subjects. An interesting four-year civil engineering curriculum recently elaborated is that of the new school of engineering of Harvard University. About 35 per cent of the entire curriculum is devoted to the following foundation and supporting subjects: One year of college English, two years of higher mathematics, one year each in chemistry, physics, and geology, and one year in an additional science, one year in business administration and accounting; two years' work in a modern foreign language is required if the student has not made it a part of his preparatory work. Over 50 per cent is prescribed in the usual civil engineering courses, and 2 per cent is required in specific highway construction courses. A little over 12 per cent of the curriculum is devoted to elective subjects.

The curriculum in civil engineering of the Oregon State Agricultural College is typical of the curricula of a number of the leading State-supported colleges of engineering. It differs from the Harvard curriculum as follows: The requirements in foundation and supporting subjects are 39 per cent, or 5 per cent greater than at Harvard, but this includes the addition of military training, gymnasium, and a brief course in library practice. Consequently, the relative proportion of the foundation and supporting subjects are essentially on a par with that of Harvard. Sixty-one per cent is prescribed in the usual civil engineering subjects, but this includes an option which may be chosen in highway engineering to the extent of three courses, in addition to the regular course in roads and pavements. All these courses amount to nearly 11 per cent of the entire curriculum.

A few colleges of engineering, which offer options in highway engineering, require two years of modern languages, usually French or German, but the larger proportion do not require these subjects. The subjects of economics, business administration, and contracts and specifications are included in the majority of curricula, inasmuch as the civil and highway engineer must be equipped to deal intelligently with the business aspects of his profession. From the evidence which the Bureau of Education has received, the present trend of practice in colleges of engineering is not to encourage a large degree of specialization in the civil engineering curriculum.

SHORT, SPECIAL, AND EXTENSION COURSES IN ROAD CONSTRUCTION.

Typical among the institutions which offer short and special courses in road making are the following: The University of West Virginia, which holds a four-day conference of all State road officials, followed by a three-day school for general instruction. Extension schools of two and three days' length are held at convenient centers in different parts of the State. These courses are open to all who are interested in good roads, regardless of college entrance requirements or previous experience. The University of Tennessee offers a short winter course for highway engineers which lasts six weeks. The last two days of the short course is devoted to an annual conference of road officials. On this occasion all persons interested in any kind of highway work are invited to attend. The University of Georgia "good roads department" is organized to give direct instruction and field assistance throughout the State. Special courses of instruction are offered at the university, chiefly for the benefit of county officials and other mature special students. Maryland State Agricultural College offers an elementary course in the location, construction, and maintenance of county roads and bridges; this is a part of the two-year course in mechanic arts. Many other similar examples might be given, but these are sufficient for our purpose. Furthermore, an excellent opportunity is open to our public high schools, both rural and urban, to teach the rudiments of the economics of highway transportation in order that the growing generation of young men and women may understand the relation of good roads to national prosperity.

COOPERATION WITH THE STATE.

Owing to the lack of proper facilities, the State highway departments and commissions have in many instances been obliged to obtain the cooperation of a number of the leading State universities and colleges in working out the practical problems and tests called for in the highway construction work in the States. At present there are at least 10 institutions whose laboratories are used in testing road material for the States in which they are situated. These institutions are Iowa State College, Georgia Polytechnic Institute, University of Idaho, Kansas State Agricultural College, University of Kentucky, University of Maine, University of Michigan, University of Minnesota, University of Missouri, University of Nevada, and Ohio State University. This cooperation has enabled a great many students to come in contact with the practical work of the highway departments of the different States.

RESEARCH IN HIGHWAY ENGINEERING.

In the future our larger engineering colleges will play a much greater part in highway engineering and construction than in the past, owing to the increased demand for research work in the various branches of highway construction. In recent years some very important experiments in highway engineering have been carried out by our State universities which have proved to be of great financial value to the States and to the Nation. In view of the extensive road-building program which is now going into effect, the organization and execution of a well-coordinated plan of highway engineering research will be of first importance. With this in mind, the division of engineering of the National Research Council is planning to distribute to the various higher engineering institutions research problems in highway engineering which must be solved in the near future. We may therefore expect that the universities of the country will make useful contributions to the program of road building, and instead of a few scattered experiments with more or less duplication of effort, systematic research will now be undertaken.

Already a number of leading engineering schools have ample facilities for carrying on first-class graduate work in highway engineering leading to the master's and the doctor's degrees.

HIGHWAY TRANSPORTATION ENGINEERING EDUCATION.

Perhaps the more difficult of the two complicated problems facing the engineering colleges is that of preparing highway transport experts. Granted that our highway engineers will prepare suitable roads for the growing number of automobiles and motor trucks, the great question, the final cause of all our efforts, is the planning of an automotive transportation program commensurate with the rapidly growing needs of this country. The continued expansion of internal commerce which has been so marked since the war is demanding an output of motor trucks and automobiles that will create a volume as well as a variety of traffic and the consequent economic problems which can not be solved by the novice.

At least 12 colleges and universities of importance are giving attention to the subject of transportation, and especially in the field pertaining to railroads. Full four-year curricula in railroad transportation are offered by the University of Illinois and the Wharton School of Commerce and Finance of the University of Pennsylvania. Little has been attempted in highway transport education. However, it is due in large measure to the leadership of Prof. Arthur H. Blanchard, formerly of Columbia University and now professor of highway engineering and highway transport of the University of Michigan, that highway transportation education is commencing to be recognized as one of the coming engineering specialties of importance.

The help which the colleges and universities of the United States are giving in preparing men to meet these vital needs of the country places the Nation, the States, and individuals under great obligations to our colleges for the services they can render, and at the same time there is placed upon these institutions an important responsibility which they alone can perform.

THE CONFERENCE COMMITTEE ON HIGHWAY ENGINEERING EDUCATION.

MEMBERS OF THE COMMITTEE.

Chairman: Thomas H. MacDonald, chief of the Bureau of Public Roads, United States Department of Agriculture.

Secretary: W. K. Hatt, head of the School of Engineering, Purdue University.

P. St. John Wilson, chief engineer, Bureau of Public Roads, Washington, D. C.

T. Warren Allen, general inspector, Bureau of Public Roads, Washington, D. C.

E. J. James, assistant chief engineer, Bureau of Public Roads, Washington, D. C.

Paul D. Sargent, chief highway engineer of Maine, president of American Association of State Highway Officials, Augusta, Me.

W. G. Hoyt, assistant chief, water resources branch, Geological Survey, Washington, D. C.

Lieut. Col. J. M. Ritchie, Motor Transport Corps, United States Army.

A. N. Johnson, consulting engineer, Portland Cement Association, Chicago, Ill.

H. G. Shirley, secretary and treasurer, Federal Highway Council, Washington, D. C.

Charles E. Ferris, dean of the School of Engineering, University of Tennessee, Knoxville, Tenn.

Hector J. Hughes, professor of highway engineering, Harvard Engineering School, Harvard University, Cambridge, Mass.

C. J. Tilden, professor of engineering mechanics, Sheffield Scientific School, Yale University, New Haven, Conn.

R. H. B. Begg, professor of civil engineering, Virginia Polytechnic Institute, Blacksburg, Va.

John R. Lapham, assistant professor of civil engineering, College of Engineering, George Washington University, Washington, D. C.

EDUCATIONAL SUBCOMMITTEE.

W. K. Hatt, secretary.
Hector J. Hughes, associate.
C. J. Tilden, associate.

PROGRAM.

1. Personnel needs of the districts under the supervision of the Bureau of Public Roads:
   - (*a*) Available supply and future requirements indicated by definite percentages. Losses due to deaths and resignations. The increase in the amount of work to be done.
   - (*b*) Should permanent advisory board attempt a control of the highway engineer supply through limitation of students permitted to take a highway engineering course when there is an oversupply or to induce students to take such a course when the supply is insufficient.

2. Duties of highway engineers:
   - (*a*) Commissioner, director, or chief of Federal, State, county, town, or city highway department, bureau, or board.
   - (*b*) Chief engineer of one such highway bodies.
   - (*c*) Assistant chief engineer or member of chief engineer's staff.
   - (*d*) Division or district engineer.
   - (*e*) Resident engineer.
   - (*f*) Chief of party, transitman, levelman, rodman, or draftsman.
   - (*g*) Bridge engineer or bridge engineer assistants.
   - (*h*) Chemist, testing engineer, geologist.
   - (*i*) Economist, research engineer.

An extract from the report of the Congressional Reclassification Commission is attached for reference.

3. Education for highway engineers:
   - (*a*) Full graded-school and high-school work and a college undergraduate course of four years, leading to what degree? Is any other length of undergraduate course suggested?
   - (*b*) Should the first two years of the college course be purely a civil-engineering course, with the highway engineering subjects confined to the third and fourth years of a civil-engineering course? If so, what proportion of the third and fourth years should be in highway engineering, what subjects each year, and the number of hours?
   - (*c*) How much highway transport work should be given to an undergraduate electing highway engineering, in what years, what subjects each year, and the number of hours?
   - (*d*) Should there be an attempt to secure as a part of the complete college course practical experience during summer vacations by arrangement with organizations doing highway design, construction, and maintenance?
   - (*e*) Research work for the highway engineer undergraduate.
   - (*f*) Postgraduate course—of what it should consist, number of years required to complete the course, months during the year suggested for the course, and hours in each year.

THE PURPOSE OF THIS SECTION.

The question discussed by the Section on Highway Engineering was:

How shall a supply of trained men be secured for highway engineering from graduates of engineering colleges and through short courses and graduate courses? What cooperation may be [illegible] between the State highway commission and the colleg
of the facilities of both organizations in reciprocal se

Having defined the character of the service to b
highway engineers, what studies of the curriculum wi
ful in training men for such services?

The discussion, therefore, followed the following li

A. Needs of personnel:
   - (1) Number of men needed each year for
     zations.
   - (2) Supply of trained men from colleges.
   - (3) Control of supply of trained men.

B. Duties of highway engineers:
  (1) Specification of duties.
  (2) Salaries.
C. Education of highway engineers:
  (1) Education of highway engineers.
  (2) Relation of colleges to highway organizations.
  (4) Postgraduate courses.

ABSTRACT OF DISCUSSION.

The discussion may be abstracted as follows:

A. *The needs of personnel.*

From the data submitted it appeared that the need of trained highway engineers, inspectors, etc., far exceeds the supply now available. An annual increment of 1,100 graduates is needed, whereas the supply of civil engineers of graduates of all branches is only approximately this number. The suggestion was made that some central body should supply information to the colleges of the opportunities and openings in highway engineering, so that the senior class might intelligently dispose of themselves.

B. *Duties of highway engineers.*

The specifications for the job and for the qualification of men to perform the duties and discharge the responsibilities attached to the job were recited; the scale of salaries now paid and proposed to be paid. It appeared that the latter were not large enough to compete with industrial opportunities. The difference might be overcome by creating ideals of public service.

C. *Education of highway engineers.*

The relative importance of fundamentals and special applications in education was discussed. The need for studies other than of technology to prepare a man for administration and for citizenship was emphasized. The situation in the colleges, which are struggling under an overload with a diminished teaching force which is competed for by the industries, was forcibly described and the necessity of public support of these institutions strongly stressed.

The need for connecting up the colleges with the highway commission for reciprocal service was also emphasized.

The difficulty of synchronizing the college program with the construction period was noted. The summer employment of students in services of increasing importance in succeeding vacations was suggested as a valuable means of training, especially if it were related to the term instruction. The residence of the technical staff of the commissions at the university for short periods, and the formation of classes for further study at the headquarters of the commission were suggested as additional means of training.

Research by undergraduates seemed to the conference to be limited to short problems, which, however, might be a part of a general field, apportioned by a central body. Training in research methods and the generation of the spirit of research among undergraduates was more important than the particular results.

Proceedings of the Conference Committee on Highway Engineering.

CHAIRMAN: THOMAS H. MACDONALD.

(A) NEEDS OF PERSONNEL IN HIGHWAY ORGANIZATIONS.

(1) *Needs of highway organizations in personnel.*

Mr. MACDONALD. The first subject is assigned to Capt. Wilson—Personnel needs by Bureau of Public Roads districts.

Capt. Wilson read figures from a table prepared from data received from 30 State highway departments, as cited in Mr. MacDonald's paper. (See p. 33.) These data showed that a total of 312 engineers were employed by the Bureau of Public Roads at Washington and in the field. Thirty-six States reported 3,939 engineering employees and 2,628 additional in county and other organizations, or 5,667 total.

The percentage of the several grades are:

	Per cent.
1. Above division engineer or similar grades	5
2. Division engineer or similar grades	12
3. Resident engineers or similar grades	26
4. Grade below resident engineer	51
5. Unclassified	6
Total	100

It was estimated that the needs of the next decade would be from 9 to 12 per cent per year, but that the per cent is probably far short of the actual number that will be required as the standards of the counties continue to be raised and as the maintenance is placed more and more under technical direction.

As further indications of future needs, the paper by Mr. MacDonald quotes the following data:

Total expenditure for highways, by years, in the United States.

Year.	Total.
1916	$272, 634, 413
1917	279, 915, 332
1918	286, 098, 192
1919 (estimated)	303, 670, 105
1920 (estimated available for expenditure)	783, 000, 000

Because of the industrial and transportation situation it is probable that only 50 per cent of the amount available for 1920 can be spent.

The extension of engineering control of expenditure and increased need for engineering beyond the proportion of money available is shown in the following data: The per cent of construction funds expended under the control of trained engineers for the year 1916 was 27 per cent; 1917, 35 per cent; 1918, 41 per cent; 1919, 46 per cent; 1920, 81 per cent.

Maintenance of highways by organizations operated by engineers also demands a supply of trained men. Of the total miles of highways, the State highway departments maintained 3 per cent in 1916; 7.3 per cent in 1917; 8.1 per cent in 1918. The field of maintenance is of increasing importance.

A. N. JOHNSON. Did the figures given in your paper take into account deaths, resignations, etc.?

Capt. WILSON. Yes. In the letters sent to the State highway departments the following sentence was included: "It should be borne in mind that the need will be caused by deaths and resignations, as well as increase in the amount of work to be done."

Mr. HOYT. The United States Geological Survey finds that the turnover to keep up the normal is somewhere around 20 per cent.

Mr. BEGG. Has there been any attempt to find out whether the shortage is due to a shortage of engineers or to salaries?

Capt. WILSON. Both. If we paid higher salaries we could get men, although the number of highway engineers is limited. The amount of work has increased very much more rapidly than the opportunity to train the men. A quarter of a million dollars was spent in 1916, and there is three times that amount to spend this year, and three times the amount of work to be done. Very few men have been going into highway engineering during the last three years.

CHAIRMAN. I have a total of approximately 6,000 men reported employed by the 30 State highway departments. That is an average of 200 to the State. At that rate 48 States would employ 9,600 men. These are men who should have engineering training and do not include some of the lower positions. The annual needs would be 10 per cent of 9,600 or 960 engineers. If our estimates are correct, when the present freshmen class graduates there will be approximately 5,500 engineers graduating. The needs for highway engineers will require approximately 20 per cent of the entire number of engineering graduates.

Mr. SHIRLEY. So far as I can see, the importance of highway engineering has not been impressed upon the educators as it should be. The demands in the past will sink into insignificance in comparison with what they will be in the future. Highway construction is going to increase and increase. Many new problems in research are coming up. Therefore there is no speculation in training as many men as can be secured.

(2) *Supply of trained highway engineers.*

CHAIRMAN. What is the estimate of the number of engineering graduates that are civil engineers?

Dr. HUGHES. About 20 to 25 per cent graduate in civil engineering now.

Prof. HATT. About 20 to 25 per cent.

Prof. TILDEN. Rather high; I think under 20 per cent. The mechanicals and electricals have been running rather higher.

CHAIRMAN. At the rate of 20 per cent rate there would be approximately 1,000 or 1,100 graduates in civil engineering. If these estimates are at all correct, this number would just meet the requirements of the State highway departments, provided every man went into the highway work.

Prof. HATT. The graduates in civil engineering from Purdue University have entered highway engineering work as follows: 1913, 8 per cent; 1914, 8 per cent; 1915, 13 per cent; 1916, 10 per cent; 1917, 19 per cent; 1918, 21 per cent; 1919, 26 per cent; 1920, 23 per cent.

In motor-transport work from the school of mechanical engineering, including the manufacture of automobiles, sales, maintenance, research: 1916, 13 per cent; 1917, 21 per cent; 1918, 33 per cent; 1919, 27 per cent; 1920, 38 per cent.

This year the balance has been disturbed, because it is the first time the manufacturing concerns have been canvassing civil engineering seniors for employment in manufacturing, mainly with a view to sales engineering. For instance, one company manufacturing road machinery is paying $150 to $175 a month to our seniors to go into its factory; and the highway commission is paying $125. It is difficult to persuade seniors to enter the latter.

CHAIRMAN. What is the average per cent that might be counted on to go into the highway work?

Prof. HATT. It is difficult to predict the quantity. The springs of action moving our students are difficult to determine. They lie back in the high schools, and magazine literature, and student boarding houses.

Dr. HUGHES. One of the springs is very clearly defined. In my office, where all the work of nine different programs comes in, during the past week there have been 20 representatives of industrial firms, electrical and mechanical chiefly, offering the men $125 and $150, and, in one case, $175 to start, and one of them offered $225 at the end of six months. The highway engineers can not be placed at such prices, and until something is done to make the highway work attractive we are not going to attract civil engineers into this kind of work. When the Harvard departments were working at the Massachusetts Institute of Technology there was a regular highway program which graduated a number of students. I have talked with a number of them since. They wish they had not gone into highway work. They say: "We go into highway departments and they give us work for the summer, and when January comes they do not need us; or we have to take a civil-service examination to get a job." That is one of the real situations. In fact, that is what your chairman said this morning. It is a matter of inducements.

(3) *Control of supply of highway engineers.*

CHAIRMAN. If we have discussed the present need sufficiently to fix some figures in our minds that are not very definite, but, perhaps, estimate the requirements, we shall pass to the next topic: Should the permanent advisory board attempt a control of supply of highway engineers through the limitation of students permitted to take a highway-engineering course, when there is an oversupply, and inducing students to take such a course when the supply is insufficient?

Prof. HUGHES. There is probably no more important problem at the present time in the schools of this country, technical and otherwise, than to find some intelligent means for fitting men to places. I don't see how that can be done for highway engineers until we find some way of doing it for all sorts of engineers. If sufficient inducements were made in the positions which are open to civil engineers, it would be a very simple matter to divert men to the highway work, say, at the beginning of their senior year. The places open to them now are not attractive as compared to the places which they can get immediately in particular industries or regular engineering work. Telephone companies are taking electrical engineers, starting at $150 a month.

There is another phase that is even more important. I have been told by some young men that a good man, after having been, for example, an engineer for some time in an electrical company, has a very good chance to get into some of the executive departments. I do not see that we have very much to offer men in highway engineering departments beyond strictly technical places; so that there is not the advantage, which many students look upon as a very important one—that of getting into highly paid executive positions. There ought to be something done to make those inducements. For example: The textile industries of New England up to date have had very few trained men. They will take all the men we will send them, and are willing to train them at their own expense. At the end of five years the men are likely to have $10,000 or $15,000 jobs open to them. We have not got those jobs for highway engineers. If they go into the contracting business they may expect such compensation.

One thing can be done. There ought to be some agency which will keep the schools informed of opportunities in highway engineering. In New England we learn of the opportunities in New York State and in the United States Government, but nothing of what is open in Illinois. If the schools had systematic information, gathered together from all over the country, of what jobs are open and how to get those jobs, it would materially help in inducing a man to pursue highway engineering as a future profession. The real trouble is lack of inducement.

Mr. Hoyt. The welfare of the individual student must be consulted. The industrial conditions which prevail at the time a freshman graduates will be very uncertain. He should have a broad three years' engineering education, and at the end of three years he will be able to branch out into a specialty. If some opening could be established whereby the colleges could be informed of the demands in various fields, the men of the senior class, in consultation with the professors, could switch from one field to another.

Prof. Tilden. I should like to ask just how an advisory board could control the highway engineering supply? What would be the basic organization of such a board?

Chairman. This same question is troubling the chairman. This was not my question; it was Prof. Hughes's question.

Prof. Tilden. An important point to consider in this matter of any attempt to control is the lag of supply behind the need under the present system. For instance, if there is a strong demand one year for graduates in mechanical engineering, that becomes apparent not only to the senior class but to the students in the lower classes of the school who are just making the decision as to which lines, civil, electrical, mechanical, or chemical, they are going into. A sudden increase in the demand for chemical engineers this year is going to have its effect in inducing a number of freshmen, sophomores, or juniors into choosing that line of work, and these men come up as available material three years or two years or a year later. At that time the industrial demand may be partially met, and there is at the same time the oversupply from the schools. That particular phase of the time factor, it seems to me, would be an important one.

Prof. Hughes. It is the whole question, and, of course, one way to help this is to avoid a choice any earlier than necessary, but it is wider than that. I do not see how you can do it until you can find a far more intelligent basis than we now have for adapting men to the work for which they are suited and training them for it.

for in the highway construction work in the States. At present there are at least 10 institutions whose laboratories are used in testing road material for the States in which they are situated. These institutions are Iowa State College, Georgia Polytechnic Institute, University of Idaho, Kansas State Agricultural College, University of Kentucky, University of Maine, University of Michigan, University of Minnesota, University of Missouri, University of Nevada, and Ohio State University. This cooperation has enabled a great many students to come in contact with the practical work of the highway departments of the different States.

RESEARCH IN HIGHWAY ENGINEERING.

In the future our larger engineering colleges will play a much greater part in highway engineering and construction than in the past, owing to the increased demand for research work in the various branches of highway construction. In recent years some very important experiments in highway engineering have been carried out by our State universities which have proved to be of great financial value to the States and to the Nation. In view of the extensive road-building program which is now going into effect, the organization and execution of a well-coordinated plan of highway engineering research will be of first importance. With this in mind, the division of engineering of the National Research Council is planning to distribute to the various higher engineering institutions research problems in highway engineering which must be solved in the near future. We may therefore expect that the universities of the country will make useful contributions to the program of road building, and instead of a few scattered experiments with more or less duplication of effort, systematic research will now be undertaken.

Already a number of leading engineering schools have ample facilities for carrying on first-class graduate work in highway engineering leading to the master's and the doctor's degrees.

HIGHWAY TRANSPORTATION ENGINEERING EDUCATION.

Perhaps the more difficult of the two complicated problems facing the engineering colleges is that of preparing highway transport experts. Granted that our highway engineers will prepare suitable roads for the growing number of automobiles and motor trucks, the great question, the final cause of all our efforts, is the planning of an automotive transportation program commensurate with the rapidly growing needs of this country. The continued expansion of internal commerce which has been so marked since the war is demanding an output of motor trucks and automobiles that wil create a volume as well as a variety of traffic and the consequent economic problems which can not be solved by the novice.

At least 12 colleges and universities of importance are giving attention to the subject of transportation, and especially in the field pertaining to railroads. Full four-year curricula in railroad transportation are offered by the University of Illinois and the Wharton School of Commerce and Finance of the University of Pennsylvania. Little has been attempted in highway transport education. However, it is due in large measure to the leadership of Prof. Arthur H. Blanchard, formerly of Columbia University and now professor of highway engineering and highway transport of the University of Michigan, that highway transportation education is commencing to be recognized as one of the coming engineering specialties of importance.

The help which the colleges and universities of the United States are giving in preparing men to meet these vital needs of the country places the Nation, the States, and individuals under great obligations to our colleges for the services they can render, and at the same time there is placed upon these institutions an important responsibility which they alone can perform.

veying instruments; computing data for reports of records; plotting notes and maps; preparing working drawings where design is furnished.

Qualifications.—Training equivalent to that represented by graduation from high school; not less than two years' experience in engineering work; familiarity with the use of the slide rule; and ability to do lettering and drafting, and to make simple engineering computations.

Promotion.—From junior engineering aid to junior civil engineer.

CIVIL ENGINEERING DRAFTSMAN.

Specifications of class.

Duties.—To perform under immediate supervision routine drafting work in connection with the preparation of plans for civil engineering projects; and to perform related work as required.

Examples: Making tracings from original drawings; making drawings of minor importance; filing and indexing drawings; lettering, computing, and revising.

Qualifications.—Training equivalent to that represented by graduation from high school; not less than two years' experience in engineering drafting work; and ability to letter and to make simple calculations.

Promotion.—From copyist draftsman to junior civil engineer.

JUNIOR CIVIL ENGINEER.

Specifications of class.

Duties.—Under immediate supervision, to perform routine surveying, computing, drafting, and inspecting, on survey, construction, or valuation work. and to perform related work as required.

Examples: Surveying with transit or level; using measuring devices for stream gauging; inspecting structures during construction and after completion; assisting in laboratory tests of structural materials; preparing charts for statistical and engineering data; laying down lines for building foundations; drawing and tracing plans; making plans; table surveys; developing and drawing details of maps and charts; lettering; giving lines and grades for highway construction; keeping cost data; serving as boat officer or as assistant in hydrographic, geodetic, and astronomic parties.

Qualifications.—Training equivalent to that represented by graduation with a degree from an institution of recognized standing; with major work in engineering, preferably in civil engineering.

Promotion.—From civil engineering aid, civil engineering draftsman, to assistant highway engineer.

ASSISTANT HIGHWAY ENGINEER.

Specifications of class.

Duties.—Under specific administrative and technical direction, to be in responsible charge of a minor subdivision of a highway engineering organization to collect and compile data for specific items of highway engineering studies to take immediate charge of field survey projects in, or the design, inspection or construction of minor highway engineering work; to lay out and develo work from specifications, and to supervise the work of a drafting or computing force; to conduct specific tests or investigations of apparatus, material, or processes; and to perform related work as required.

Examples: Making surveys for the purpose of securing data for highway construction; making and reviewing plans, specifications, and estimates for highways; compiling data on, and inspecting quarries, gravel pits, and crushing plants; superintending the maintenance of experimental roads; assisting in experimental research and in the testing of road materials.

Qualifications.—Training equivalent to that represented by graduation with a degree from an institution of recognized standing, with major work in civil engineering, preferably highway engineering; not less than two years' experience in highway engineering work in field or office, proven technical knowledge and proficiency.

Promotion.—From junior civil engineer to associate highway engineer.

ASSOCIATE HIGHWAY ENGINEER.

Specifications of class.

Duties.—To perform one or more of the following functions under general administrative and technical direction: (1) To be in responsible charge of an intermediate subdivision of a highway engineering organization; (2) to exercise independent engineering judgment and assume responsibilities in studies and computations necessary in the preparation of reports, estimates, or designs; (3) to have immediate charge of the construction, maintenance, or operation of important highway engineering works or projects; (4) to direct or perform important researches in highway engineering; and to perform other related work.

Examples: Making surveys and estimates in connection with highway construction; investigating and reporting on methods of road construction; testing road materials; reviewing plans, specifications, and estimates, and making recommendations in regard to them; assisting in installing improved methods of State management of highways; laying out country systems of highways.

Qualifications.—Training equivalent to that represented by graduation with a degree from an institution of recognized standing, with major work in civil engineering, preferably in highway engineering; not less than five years' general engineering experience, of which at least one year shall have been in the direction or performance of important highway engineering work; and supervisory or administrative ability or a high degree of technical skill.

Promotion.—From assistant highway engineer to highway engineer.

HIGHWAY ENGINEER.

Specifications of class.

Duties.—To perform one or more of the following functions under general administrative direction: (1) To have responsible charge of, and to initiate, and execute policies for a major subdivision of a highway engineering organization; (2) to prepare for final executive action, reports, estimates, specifications, designs, and data; (3) to have charge of the construction, inspection, maintenance, and operation of highway engineering works of major importance; (4) to conduct or to direct major lines of highway engineering research; (5) to furnish for executive action, expert or critical advice on highway engineering works; projects, or policies; (6) to act as special advisor on highway engineering problems; and to perform other related work.

Qualifications.—Training equivalent to that represented by graduation with a degree from an institution of recognized standing, with major work in civil engineering, preferably in highway engineering; not less than eight years' general engineering experience, of which at least four years shall have been in the direction or performance of important highway engineering work; large capacity and demonstrated ability and experience in the administration of highway engineering work.

Promotion.—From associate highway engineer to senior highway engineer.

SENIOR HIGHWAY ENGINEER.

Specifications of class.

Duties.—To perform one or more of the following functions: (1) To have chief administrative charge of a highway engineering organization; or of a main division thereof, and to determine or execute general policies under the limitations imposed by law, regulations, or other fixed requirements; (2) to be responsible for reports, estimates, designs, specifications, and data, or for the construction, maintenance, and operation of large highway engineering projects; (3) to direct or to perform the most comprehensive research in highway engineering projects, policies, or valuations; and to perform other related work.

Qualifications.—Training equivalent to that represented by graduation with a degree from an institution of recognized standing, with major work in civil engineering, preferably in highway engineering; and not less than 12 years' general engineering experience, of which at least 8 years shall have been in the direction or performance of important highway engineering work of a character to give substantial evidence of engineering knowledge and ability, or of executive capacity, of the highest order.

Promotion.—From highway engineer to chief.

CHIEF.

Specifications of class.

Duties.—Executive and technical supervision over work.

Qualifications.—Training equivalent to that represented by graduation with a degree from an institution of recognized standing, with major work in civil engineering; extended professional experience, of which at least eight years shall have been of a character to give substantial evidence of knowledge and ability, and of executive capacity of the highest order.

Promotion.—From senior highway engineer.

Mr. HOYT. The basic principle on which these principles were worked up are, first, the kind of work involved; and, second, responsibility attached thereto. An effort was made to have them so general that they would apply to any branch of engineering.

For instance, in the junior grade, which is the lowest professional grade, a man must have as a basic requirement a college education or the equivalent in one of the lines of engineering. He would work in that grade under direction and under supervision until he demonstrated his ability to work independently or to supervise others. Then he would be promoted to the assistant grade, in which he would have responsibility for independent work under very general direction and also have responsibility of supervising in a very limited way the work of others. The assistant grade is that in which the rank and file, about 80 per cent of engineering employees, will have to work, and an effort was made to fix the salary for that grade as high as possible, because the chances of getting out of that grade into a higher class are rather limited.

For promotion to the associate grade there must be a demonstration of more ability to do a higher grade of work.

Going down to the lower grades there is a definite subdivision between the professional man and the subprofessional man. The specifications drawn up by the commission were primarily adapted to the Government service in Washington. In studying these in connection with the Engineering Council, we found it necessary to carry the subprofessional grade higher than the Reclassification Commission did. Therefore we have overlapped.

Now, this grade of subprofessional is the limit for the man who has not the educational qualifications to go up into the higher grades of engineering work and design. We propose to divide those two grades of men into such a subdivision or classification as would make possible an equitable salary adjustment in accordance with the responsibilities of the position and the ability of the man to do the work, the two principal factors to be taken into account. Of course, the higher up the fewer positions there are to fill. Only comparatively few men can ever reach the higher positions, so that salaries must be provided sufficient to satisfy men in the intermediate stages. That has not been done in the salary adjustments. The higher places pay much more in proportion than the intermediate places in which most of the men are employed. This fact has caused the discontent among engineers and is responsible for the tendency toward unionization which is quite a sentiment throughout the country for some sort of an organization to promote the interests of the now unorganized men.

Mr. MacDonald. While the specification that was finally adopted by the Reclassification Committee goes at the matter from a slightly different angle, is it not general enough in its character to permit the classification of all highway department employees under its division? Are these specifications not sufficiently extended to classify these men as far as need be? We are not particularly interested in the specific duties of the different classes of men?

Mr. Hoyt. In that connection I think the committee should consider the addition of a highway subprofessional grade. There are only two subprofessional grades designed for persons in the Washington service. There is a highway grade, which never goes into the full professional work; the subprofessional, which is very important to the organization, including foremen, superintendents, and men of that class. They are more or less artisans, or men who would never go to the top. By additional study they may come up to the professional grades. As a general proposition the committee would do well to differentiate between the professional man and the subprofessional man. These are two distinct fields, and they need different training.

The CHAIRMAN. I have referred to these specifications because they were arrived at after consideration of a rather wide variety of services and because it seems to me it would not be desirable to try to limit grades too closely. The requirements and duties of our highway engineers will change from year to year, and it seems to me that it is desirable to have a general classification, with their responsibilities and duties fixed, rather than a specification of titles as Chief Engineer, or Resident Engineer or Bridge Engineer, etc.

Mr. Hoyt has given an outline of the professional grades of engineering service as outlined by the Reclassification Commission. Now that committee did not fix a salary for the senior grade, but for the engineer of second grade, for which the recommendations range from $4,140 to $5,040.

Salaries of highway engineers.—The following schedule shows the comparison of salaries in the Bureau of Public Roads in 1919 as compared with those in the various States and those recommended by the Reclassification Committee, grouped under these several divisions:

Rank.	Bureau of Public Roads, both office and field, exclusive of bonus.			Compensation in various States;[1] reclassification basis.			Recommended by reclassification.		
	Minimum.	Average.	Maximum.	Minimum.	Average.	Maximum.	Minimum.	Average.	Maximum.
Senior	$4,500	$4,500	$4.500	$5,000	$7,150	$10,000	....	....	....
Engineer	2,500	3,641	4,000	2,820	4,300	5,000	$4,140	$4,590	$5,040
Associate	2,280	2,656	3,240	2,200	4,100	6,000	3,240	3,540	3,840
Assistant	1,560	2,141	3,000	2,100	2,635	3,300	2,400	2,700	3,000
Junior	950	1,537	2,100	900	1,835	3,060	1,800	1,980	2,160
Civil engineer aid	720	860	1,080	800	1,043	2,080	1,200	1,500	1,800
Junior engineer aid	480	767	1,080	480	915	1,500	840	1,020	1,200
Copyist	540	760	1,080	....	1,200	....	1,080	1,170	1,200

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[1] Massachusetts, Wisconsin, New York, Delaware, Maryland, Michigan, Pennsylvania, Californi Texas, Iowa, Illinois Indiana, New Jersey, Ohio—14 States.

From these it will be noted that in the 14 typical States having well-organized highway departments the salaries are higher than those recommended by the Reclassification Commission, and very much higher than those now paid by the Bureau of Public Roads

But even this schedule is lower than the recommendations of the American Association of Engineers or the Engineering Council. The recommendations of this association are shown in the following schedule:

Rank.	Compensation.	
	Minimum.	Maximum.
Senior	$8,000	$15,000
Engineer	4,000	10,000
Associate	3,600	5,000
Assistant	2,400	4,000
Junior	1,800	2,400
Engineer aid draftsman	1,800	2,400
Junior engineer aid	1,200	1,500
Copyist	1,800	2,400

Prof. Hughes. One of the big milling machine companies of which I know has quite a large group of men out of college a year, each of whom is paid $4,600 a year. If they are out four or five years their salary is $10,000 or $12,000.

Chairman. Mr. Allen, can you outline the divisions on the schedule under topic 2, showing the different offices in a highway department? That would give something of an outline to the representatives of the colleges of the grades into which these different lines of work would fall.

Mr. Allen. (*Reads from schedule.*) (See extract from report of Congressional Reclassification Committee, p. 59.)

Chairman. The district engineers would fall into the second class. Does that give any indication of the relative responsibility these engineers would carry?

Prof. Hughes. If the salaries in general available throughout the country for highway engineers were raised to such a standard as that, a large number of men would be available. There still remains in my mind what I have noticed in the minds of the students. When they have reached that grade there is nothing left to them except a commissioner's job. They don't feel that they have the future that a big industry offers.

Chairman. It was that statement that made me desire to bring out this point. As a matter of fact the engineers in the departments today are the men who are doing the executive work. The commissioners in many cases are acting more as an advisory or directory board rather than as an executive board.

Prof. Hughes. I mean by commissioner a director.

Chairman. I think you will find in the duties of the two higher grades, and possibly the three higher grades, specific directory charge over others. The men in these grades have supervisory charge in responsible positions. You will see that a number of existing positions would fall into one of these grades, either 1, 2, or 3.

Prof. Hughes. When it is realized that the big industries would absorb graduates into positions that would pay as large salaries, the opportunity does not appeal to these ambitious men.

Prof. Hatt. I think Prof. Hughes has struck the keynote here. I have noticed for a number of years that students have been discontented with purely technical work. A sales engineer gets $7,000 or $8,000 a year, and so students are seeking entrance to the industries rather than to purely technical positions.

Prof. Tilden. I do not think that that question ought to be put solely on a compensation basis. Interest in the work is a very large factor. Of course a man must have a certain minimum salary. He wants to have a reasonable outlook for the future, but if it was only money he was looking for our graduates would all go into plumbing or bricklaying.

Chairman. I think you are right in that matter, Prof. Tilden, that the compensation can not be pecuniary entirely, but it will have to be sufficient so that a man can support himself and his family comfortably. After that, is not the big problem to set up ideals of public service that will draw men into these positions? Is not that the big problem before this conference, trying to set up the ideals of public service that will attract men and change the public sentiment that apparently is all directed against the public service. In some countries a man can belong to governmental and State service and walk right up the street. In this country apparently it is necessary to take to the alleys or by-roads. It ought to be permanent service and on a graduated basis.

(C) EDUCATION FOR HIGHWAY ENGINEERS.

Chairman. While the committee on program has outlined our work to cover the technical requirements here, I am not sure that that is the big question. The third topic—Education for highway engineers—will be opened by Mr. Ferris.

Mr. Ferris. I believe most of us agree that there has been a tendency too far in specialization. * * * Highway transport work is also new to us except in a few institutions, and with a few exceptions we are quite at sea. I can not pretend to answer any of the questions set out. I am very anxious to know what the decision of this conference may be.

If I have anything of real value to offer to you gentlemen, it is based on a little experience of our own. My message is in the interest of the man who is not working for a college degree at all. You can not run an army without a large number of noncommissioned officers, and you can not build highways without a lot of noncommissioned men. You spoke this morning, Mr. Chairman, on the immediate need of men to do our work. We can not wait four years. In Tennessee we have adopted the following plan which grew out of our short courses of two or three days, or four or five days.

Our short course is a slack-season course. You generally hear suggested that highway engineers are taken off the pay rolls in January and February, the slack months. If not taken off the employer is glad to find them willing to leave the pay rolls, so we have established a winter short course of six weeks. We undertake to draw into that course, not the college-trained man, but the man of experience who is doing the work. As Mr. MacDonald said this morning, they do put the thing over. We are not willing to throw out of employment the man now building highways, but would like to make him a better highway builder. The short course has done much along that line. We give these men work in the laboratory, in the drafting room, in mathematics, in the use of instruments, adjusting and care of instruments, and a strong course of lectures in highway engineering and highway construction. We give elementary courses in mechanics. We do not require them to take them. They have some selection. The course has helped the counties and the highway department to get better men.

CHAIRMAN. This topic will be discussed further by Prof. Tilden.

Prof. TILDEN. This question, Mr. Chairman, is really one of construction along lines in which I have been particularly interested and in which most of us in educational work are most vitally interested now, namely, the construction of the college curriculum. This is one of the largest construction problems before engineers now. In trying to find some definite solution, it has been borne in on me that we have been building college curricula heretofore only in two dimensions. We have so many hours per week on one dimension and have so many weeks, 15 in a term, or four years in the other dimension; and in that plan, bounded by those two linear dimensions, we have a certain topic or a certain field. The most important part, the most vital factor in educational value, in any course of study is in the third dimension, the dimension that builds it up, which could be represented, perhaps, more by the intangible factor, or the less precise and definite factor, of the personality of the teacher and the inspiration he is able to give his students, secured by a teacher of intellectual training and leadership. So that when we come to discuss how much highway transport work should be given to an undergraduate, or the length of the undergraduate course, those are questions which are concerned in the two dimensional aspects of the case. To use a rather extreme instance, I believe that a man would be better fitted to build bridges, or at least to learn how to build bridges, or to build highways or to handle an executive job of any kind, if he had had a three-hour-a-week course in Greek under a man like Gildersleeve than he would if he had had a more specialized course under a man who had not the inspiration and power to bring out the intellectual side as a real teacher has. I do not want to answer this question, Mr. Chairman, except in that way.

Therefore, how much highway transport work should be given to an undergraduate depends on how much real inspiration the teacher can develop in the students. That is the main thing, and it is the thing we are far too apt to neglect. It becomes a very important question just now, when we are having so much trouble in getting teachers who are able to handle any of our courses. I should like to leave the question with just that one idea and give the rest of my time to those who will discuss it.

Mr. Hoyt. I believe the needs of highway work and the work on which I am engaged—hydraulic work—are better filled by a man who had a good fundamental education without any specialization. At the end of six months we can give a man more training than he can get in two years in college training. The fashions in highway building or other engineering work change about as fast as fashions in women's styles.

Prof. Hatt. One eminent teacher used to say that a college curriculum could not be standardized, because it was determined by the personality and training of the particular professors on the staff. In his view, which agrees with Prof. Tilden's view, a course was a vehicle by which a general end was attained. I think that this view is rather extreme.

Col. Ritchie. I think the keynote has been struck. Take highway engineering. From the military standpoint, it is my opinion that it would be better to have a man take four years of a real engineering educational course than a course in highway engineering. If he wants to specialize, all right. Specialists do not have much of a place in the Army outside of Ordnance or Signal Corps. A man may be building a bridge to-day, a warehouse to-morrow, or a sea wall next week, and when he gets in the zone of action he may be repairing shell holes to-day and building wire entanglements to-morrow. So that the field for specialists in military work is very limited.

There is one point I have noticed in the last 20 years of my experience, and that is that very few engineers have been taught economics, statistics, cost accounting, etc. I think that every course should take this into consideration in connection with the development of the engineer. So far as highway transport is concerned, outside of maintenance, which requires mechanical ability, it is largely one of business administration, and also a knowledge of accounting, being able to make traffic surveys, and how to dispatch vehicles. I think it is largely one of business education rather than of technical education.

Mr. MacDonald. Has it been your observation, Col. Ritchie, that men with engineering training did better in the transport work than men without that training?

Col. Ritchie. Absolutely. A man who is technically trained fits more readily into any niche, regardless of where he is, than a man who is not so trained.

Mr. Sargent. It was my observation that all engineers, taken as a group, have not had a broad enough training in the fundamentals—I do not mean fundamentals of engineering, but the fundamentals the colonel spoke of, economics, business training, and the social side of engineering; that is to say, it has been my observation that they do not have the proper conception of the problem as a whole. Their vision is too limited, is bound up and down by technical limitations.

Mr. MacDonald. Do you have difficulty, Mr. Sargent, in picking out a man to send into different parts of the State to talk before the people when you have a difficult situation to be met?

Mr. Sargent. I can't find them; I can't do it myself.

Prof. Hatt. What the college does is to train men. The college student gets training, while the man in the field gets experience. The aim of this training is a mind that will think clearly and straight, which can quickly comprehend complicated situations and analyze them to their elements, which assembles well-determined facts before drawing conclusions. The atmosphere indicates ideals also.

Now, this training may best be secured, as far as it is possible to train individuals, when the student is interested in a subject that is related to something he expects to do in later life. There is, I think, a misconception concerning "specialization." Like "technical" and "abstract," it may connote unfortunate tendencies in education.

With us a "special course," in the senior year, presents a situation in which a small group of men come into intimate contact with a professor who knows his subject theoretically and practically, then learn its setting, go with him to the library, study broadly and deeply. Is this not a proper vehicle for training, regardless of the subsequent employment of the student?

The engineering professors are moving away from the rather narrow and technical treatment of topics; they demand less "rivet spacing" from students. We are introducing more of economics, business law, corporate organization, finance, public speaking, etc. Business law obtains an excellent reaction from the student. It is really a humanizing study.

Of course, in a desire to develop general mentality we must not forget we are training engineers with good habits, that demand formal patterns in field notes, laboratory exercises, reports, and drawings. Pure ability will not go far in engineering without these handmaids of performance. There is a danger of loss in our new emphasis on general mentality. As to another phase of so-called specialized instruction, my information is that there is but little migration of civil engineering graduates to purely mechanical or electrical fields or vice versa, after graduation. The few that so migrate will not determine questions of curricula. The large migration is into business, in banking, for which a civil engineering course is a very good preparation.

A course in roads and pavements extending throughout one year is, in my opinion, a fundamental course in civil engineering curricula and may be taught broadly. Every State needs men trained in the fundamental principles of building and maintenance. We have passed the pioneer days, and such courses should not be limited to a few centers. With the assistance of lecturers from the field of practice, which from the standpoint of training of students should be quite limited in amount, a technical school in each State should be able to conduct such courses.

Mr. Begg. I have just passed through the painful experience as chairman of the committee revising our engineering course. One group wants the course so broad as to crowd out all technical subjects, another group wants a particular technical specialty allowed so much time that general education would suffer.

In a four-year technical course, I do not see where there is room for both a general education and thorough technical training. It seems to me if the engineering colleges can come to the same custom that the other professional schools have—law and medical—we can maybe get somewhere. In a medical school they do not attempt to give any general education, but they expect their men to have a general college education before they come to their professional course. It seems to me the engineers will have to do the same thing. Everyone knows the engineer has to have a general knowledge of English. It takes three years to get that. I suppose that instruction should be given in a modern language, which most of the technical schools provide. That will also take two years after high school. There is mentioned business law, economics, social science. Now by the time the student has had training in all these he has taken up four years and there is not time for special training.

We must divide the work. Let the liberal arts colleges give the general education and the technical schools the technical education.

Another point is that a purely technical school can not usually afford to have the very highest grade of men for the general subjects.

Of course the technical schools are supplying the good grade of technical men.

As to a general education, so far as the technical school can give it, I suppose what we want in the end is to build up a man on the fundamentals of mathematics, economics, etc., with ability to apply these to any line of work. Certainly he gets as good a training in mathematics by studying such a subject as bridge design as he would by going on for a long time in pure mathematics. A good deal of his economics can be gotten about as thoroughly in a good course of highway or railroad economics. So that a great deal of that general class of knowledge he should be able to get in a technical school course if properly taught.

As far as a specialization is concerned, he should not begin the specialization too early. If a man is allowed in his fourth year to put more of his time on one of the different branches of civil engineering (structural, railway, highway, or sanitary), he practically takes that specialty, and if he is interested will get more out of it. The general training is practically as good in one as the other, so that even supposing a man put the bulk of his time on highway work and later went into a sanitary concern his time would not have been wasted. He would get the training in methods of study and of obtaining information on a given subject, and that would be as useful in one branch as the other. So I like the idea of allowing a man in his last year to specialize considerably on the branch he is interested in, even allowing for the fact that a great many men will not stay in that branch they have specialized in.

Mr. MacDonald. Are there any other discussions on this same subject—"Education for highway engineers"—or any other suggestions?

Mr. James. If the committee does report on specialization in highway work, there are certain details, certainly from the standpoint of the Bureau of Public Roads, that are not touched on at all in a specialized course that should be touched on. Methods of surveying that apply to railroad work are used in a general way for highway work. For instance, college men seem to know nothing about "backing down a hill." Our highway surveyors will back down a hill to get a line. Men come out of college knowing nothing about the interpretation of tests, especially in bituminous work. All they know is whether the material conforms to the specification or not. If there are wide ranges in the possible mix, and the mix is running close to the maximum or minimum range, they do not know where to put their bitumen. In grading concrete aggregates the methods now used and the shortage of materials require refinement, if we are going to use a lot of material which we really ought not to discard. We get men out of colleges who do not know the first thing about those things. It seems there are a lot of details in specialized courses that should be worked out, and men should be filled as full of those things as they can be.

Mr. MacDonald. In my judgment you are mixing things up for these educators and have really brought out two rather different lines of study. Surveying, which is fundamental in the engineering course, was founded, of course, in railroad methods, and highway engineering has suffered because railroad engineering was the first engineering discovered. In fact, we all tried to use railroad engineering on highways. I do not know anything that suffered more than highway bridges because they followed railroad bridges. Now, surveying is a rather fundamental thing in civil engineering. That is not what you call a specialized course.

Mr. James. When they come to specializing in the highway engineering course those conditions should be brought out.

Mr. MacDonald. What we want them to do is to teach surveying and not teach railroad surveying. When we come to those other points, the analysis of bituminous materials, etc., that comes into another field somewhat more highly specialized. You would not consider that a fundamental course in civil engineering.

Prof. Hatt. It is said that the courts follow public opinion in their judgments, and it would seem just as natural that engineering curricula should change with the changes in industrial conditions. We have cut down the number of hours devoted to railway engineering largely in the last few years and are putting more into highway engineering.

Mr. Hughes. A great many schools are teaching some of the subjects Mr. James mentioned, not with the idea of railroad engineering or surveying alone.

Prof. Hatt. It is agreed that the graduates must have the fundamentals of general training in mathematics, science, and language, and in the foundations of engineering technology, and that they should be furnished with some of the tools of their profession, such as drawing and surveying.

At present a proposal to lengthen the period of training—to give more years—seems impracticable. Speeding the student as he was speeded up in training camps, providing a more orderly and efficient administration of studies to avoid duplication, a diminution of the distractions of the college campus, the better use of the library an laboratories, the shortening of vacations, a scientific study of th teaching process—all of these may accomplish the results of the fiv year course. But the data for judgment upon this question are no available.

There remains the consideration of adjustments of subjects. Th older civil engineering curricula provided for the three then prevailing demands for trained men in surveying, railroad engineering, and structural engineering. For a period of years the large majority of the graduates entered professional service through the railroad maintenance of way or construction corps or through the drafting rooms of the structural-steel companies. It is a fair question to ask if the amount of time devoted to the direct preparation for these services may not be diminished. Surveying has in some cases been transferred to a summer session.

There was also a period of overstressing of technical performance of field work, shop drawings, track details, and mechanism. A survey of present courses in respect to such details may disclose an opportunity for a consideration of such subjects in the field of the highway engineer such as the technology of bituminous roads.

It is by such means that the courses in economics, business law, spoken English, etc., have been introduced for the purpose of getting an engineer for community life and administrative duties.

By some of the means suggested there should be found a place in the junior year for a three-hour-a-week course in roads, such as pavements, considered as a fundamental course in civil engineering to include the bed, the foundation, and the surface of the various classes of roads. Such a course should involve the disclosure and application of the underlying principles. The element of information that a man properly trained in the use of books can afterwards secure should be minimized.

As to optional or special courses for men in the senior year the following considerations are offered: Such men as graduates are primarily to be trained to think clearly and straight, to analyze complicated situations to their elements and to learn the proper methods of work. A valuable vehicle to this end is an optional study in highway engineering in the senior year—equally valuable, indeed, with sanitary engineering or railroad engineering when a student comes with interest and a definite purpose. The desired qualities may be secured with any one study, and are ready for application in any field.

Such an option for three hours a week throughout the senior year is recommended to include, among other things, the economics of highway transportation, taxation, and finance, the relation of the traffic to the roadbed, the organization of administration, and a study of systems of production.

Lectures by specialists from the field of construction and production are available and should be used to the extent where they will not interrupt the reaction and work of the student.

Colleges may well supplement the academic instruction by organic relations with the highway commission, providing for supervised and consecutive summer employment of students, for instruction of members of the technical staff of these commissions either in part-time residence or by extension.

A further source of increased efficiency of road work is the road school or conference held at the university for a week or two in the winter season.

Mr. MacDonald. On No. 3, the education for highway engineers, I presume it was the idea of the committee that we should prepare a course or suggested course for teaching highway engineers. Fundamentally, the impression that I have received from this afternoon's talk is that, in the first place, there is no agreement upon the exact lines that we shall follow in educating engineers, how far we shall go to specialize courses. In the second place, I am greatly impressed—impressed as I never have been—by the necessity that the highway departments, the organizations using highway engineers, should connect up with the universities and colleges so that they will both understand the other's viewpoints and limitations and requirements. For instance, there is a greater opportunity in highway engineering to-day than is evidently in the minds of some of the educators. These salaries of highway engineers are temporary. They will be raised. There is an opportunity for public service that has not been impressed upon the educators. That has been the fault of the highway departments, I believe. It is not my desire to impress my viewpoints on this committee. I do not know whether you have obtained the same impression that I have, that there is a rather greater problem before the committee than the number of hours that should be devoted to any particular subject, and that is, the coming together, the meeting of the minds of the educators and the men who desire to use highway engineers, or the highway departments. Is there any other discussion with reference to this topic 3 that ought to be left with the educators?

Mr. A. N. Johnson. What can be done by this committee to get the salaries of teachers raised? It seems to me that part of the work of this conference should be to open up channels of publicity that should simply put before the people, who have voted millions for roads, the condition now prevailing—that these universities are broke and can not pay teachers' salaries, and the public must maintain them.[4]

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[4] Note by Editor.—Mr. MacDonald's address has emphasized the following situation: "But consider the case of educational institutions which we are calling upon to train engineers." Under war conditions the teaching staffs were badly disorganized. Last year there was a tremendous influx of new students, and the appropriations have, in general, been less than the enlarged needs. Salary budgets have not been revised to meet the competition of industrial engineering organizations, with the consequent loss of very many of the best qualified professors and instructors.

The instructor who, during prewar times, has taught a specialized course in some particular phase of engineering, such as highway engineering, is called upon to go into general teaching, or to spread his activities over for a greater number of students than he can possibly give proper attention. Educational institutions have necessarily given up their building programs in order to hold their teaching staffs together, while the

RELATIONS OF COLLEGES AND HIGHWAY ORGANIZATIONS.

Mr. MacDonald. The next topic is, " Should there be an attempt to secure, as a part of the complete college course, practical experience during summer vacations by arrangements with organizations doing highway design, construction, and maintenance?" Mr. Johnson has consented to discuss this subject.

Mr. Johnson. It has been generally conceded in engineering work that it is desirable for the student, if possible, to find some employment in his line or prospective line of endeavor during the vacation period. Now, it is a fact that usually at the time he is to return to college he leaves at just the time the highway work has reached practically the peak, along in September, and then it is difficult for the highway organization to get anyone to fill out the season to take his place. It seems to me, if it is considered desirable that students in engineering colleges, presumably taking highway work, should have this summer experience, that it might be found expedient to change the time of closing and opening the schools that their services might fit in a little more with the season in which they would be desirable. That is, if the colleges would close about the first of June and would let these men stay out until October, they would be of some real value in their work. Is it desirable for them to be away from their college work that length of time? I think very few college courses would be greatly shortened if the Christmas and Easter vacations were eliminated and that time put into the entire summer vacation period, on the assumption, however, that the students would be practically obliged to take up outside work and could secure it.

Mr. Hughes. At the University of Pittsburgh, where they have this scheme, they modify the program for civil engineering by providing for three months of study and three months of work for three years. At the University of Cincinnati they have a concentrated scheme to keep civil engineers occupied in contract and construction experience during the time when the opportunities are most available.

Prof. Hatt. Our difficulty is that the schools of engineering and of agriculture want the students out at different times, so that classes in departments of common subjects, such as mathematics and English, can not operate with a balanced load.

Mr. Shirley. You can not operate until you get a whole group of students working by themselves.

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additional room is seriously needed. Our institutions are suffering from an unforeseen expansion while they can not capitalize, to provide funds, as in the case of the industries, and a condition has resulted which the public must understand and provide for. That our educational institutions can not be neglected is a fundamental creed with the greater part of our citizenship, but the present conditions must be understood and given the proper publicity.

Mr. **Allen**. It is, I think, unquestionable that experience in the actual design, construction, and maintenance of roads will enable the student to obtain a much better understanding of the principles involved in road work. Practical application of principles is vitally necessary in order to fix them firmly in the mind and show their use in the solution of problems in highway engineering. For example, I would suggest that the student, during the freshman vacation, should spend his time as a member of a road survey party, spending some time as a chainman, some time as a rodman, some time as a levelman, and some time as a transitman. He should obtain experience in recording field notes. During the sophomore vacation, if the freshman vacation has been properly spent, I would suggest the time be directed to office work on the plotting of survey notes, the laying of grades, the computation of quantities, and the preparation of cost estimates. The junior year vacation would seem wisely spent on construction, getting experience as an instrument man in the staking out of work, the inspection of materials and work, and the preparation of partial payment estimates, both field and office work.

On the student's return to college following each vacation, he should be thoroughly examined in order to ascertain what progress he has made during the vacation. The result of such examinations might well be used as a guide in the handling of the student during the subsequent months of college study. It might also be used to determine whether further experience along the lines of that had during the vacation just concluded is necessary during the vacation the following year, or whether the preliminary experience is sufficient for the purpose, and the student may be permitted during the following vacation to obtain the more advanced experience. If his experience at the end of the junior year vacation is found to be insufficient, it might be advisable to oblige him to make it up following the end of the senior year before fully graduating him.

This is a very brief outline, but in my opinion it indicates approximately the course which might well be pursued in supplementing the study required during the undergraduate course by practical experience during vacation time.

Prof. **Hatt**. Is it possible to send young engineers on the staffs of highway commissions to the universities for further study? The universities might form some organic connection with the commissions.

Mr. **MacDonald**. For what period?

Prof. **Hatt**. In Indiana, January, February, and December.

Mr. **James**. We are trying to make them busier then.

Mr. **Sargent**. I think this is a good suggestion, but how far the highway departments would be able to put it into operation I am not prepared to say. I am positive that in our own department we have worked every man since the end of the last open session that we found room to work, and now we have not more than from one-half to two-thirds of the work done which we expected to have done at this time. I am just speaking from my own point of view. We would not have been able at any time last year to have laid off men for a month or six weeks. It would have crippled the work we had in mind to do. I think that is true of most of the State highway departments which have had this large Federal aid program on hand. However, in ordinary times, when the organization is built up and more or less work is going over from one year to another, I think it would be possible to let the younger men go for a period of one or two months in the winter at a profit to the whole organization, keeping them on the pay roll.

Mr. MacDonald. The next subject is: "Research work for highway engineer undergraduates."

Mr. Goldbeck. That is a subject that has been discussed by the other committee to some extent. I have outlined a proposed scheme for research work. In a very general way, I want to say a few words about it. In the first place, any course in college should be made for the purpose of training the mind of the student and to give him special or general knowledge to enable him to carry on his work in later life. Now, research work, I should say, ought to be conducted for the same purpose. In other words, if he conducts research work it should be conducted for the purpose of training, not for the purpose of gathering information which will be of particular value to the highway engineering profession. The graduate student, however, can conduct research work, perhaps, in a year's time, and the results that he obtains may, perhaps, be of some value. In conducting such work, though, it seems to be advisable that it should be thoroughly outlined by some central body, such, perhaps, as the engineering division of the Research Council or, perhaps, a committee composed of a number of engineers—State highway officials. Even for graduate research work the researches must be short. In other words, I do not feel that, in general, graduate research work can be conducted on the big major problems. Major problems can be divided into certain minor problems, and these can be attacked by the graduates.

Prof. Hatt. I suppose the question as to whether or not valuable research may or may not result from institutions where graduate students are not in residence is to be settled on the basis of experience. Certainly it can not be denied, for instance, that the earlier researches from the University of Illinois were of great value, and these were successful because inspired and directed by Prof. Talbot, working with senior students, who afterwards, became very productive research workers. We should not create a hierarchy of research.

By all means create an atmosphere of research in college laboratories where graduate schools do not exist.

I think the spirit of research could be stimulated if the National Research Council, or this governing committee, would draw up a comprehensive program and let the student understand that he is making the researches as a part of the big national program. Now, those results do not have to be accepted, but it is barely possible that some of the research work conducted would be of value, in which case it could be accepted, but the very fact that the students know that they are working on a big, comprehensive program would be a stimulus to them.

POSTGRADUATE COURSE.

Mr. MacDonald. This topic is properly followed by the "Postgraduate course." Prof. Agg is not here, and I shall call for a volunteer. Dr. Hewes, you have given the subject considerable thought. Do you wish to open the discussion?

Dr. Hewes. Mr. Chairman, how much have you agreed should be given the undergraduates? All research work done by students must come in the graduate course, and it would seem that the trend of opinion is that the research work done, even by the graduate students, should be limited, at least in our expectation of results from it, to the operations of an assistant. Now, as to the content of the curriculum, if we provide a course in rolling stock in the graduate years, that is to say, in the economics of automotive transport, including the relationship between public expenditure and question of how much the public is going to receive from its investment in highways, that would presuppose, possibly, that the usual year course in economics be followed by another in taxation or interest. It seems to me, also, that the question of administration is one that might better be studied in a graduate course. That is, what are the functions of the administrator which the highway engineer should perform, or to what degree should he extend his functions as an engineer into the functions of a public official—what should be his relationship to the public? Questions of that sort naturally will fall on more fertile ground in the graduate than in the undergraduate years.

It has been said that we do not know what kind of road to build. A certain amount of investigative work would naturally fall in the graduate course. I think, possibly, we could learn from the wonderful example of the school of Ponts et Chaussées, in France. It would be advisable to have some one thoroughly investigate and digest what training they give their engineers. For one thing, they teach much more mathematics than we do. We generally stop teaching mathematics at the time the student ought to begin to use it, and he should, therefore, be given some advanced mathematics, assuming that a graduate course would be two years. Doubtless we should give a graduate course in chemistry; chemistry in hydrocarbons and in cement. How much more descriptive and cultural work should go along with it I am not prepared to say. All through these graduate years there should be a coordinate course in English composition, to develop the capacity of men to report on subjects in intelligible English. If they have to appear before a board of commissioners, they will be able to present the engineering features in their report in an effective way and get away from the slide-rule attitude.

RESOLUTIONS OF THE COMMITTEE ON HIGHWAY ENGINEERING.

Need for highway engineers.—The moneys at present available for highway construction under engineering control total approximately $800,000,000. The engineering staff needed for this control will require an annual supply of 900 college-trained civil engineers, in addition to the highway engineers employed by the counties and other municipal divisions.

The supply of highway engineers.—The civil engineering schools will graduate probably not more than 1,100 students three years from now. This quota is competed for by the railroads, construction companies, and the industries, and by the county and municipal organizations. Probably not more than 300 would be normally available under the influences operating at present to fill this quota of 900.

Means of increasing the supply.—The attention of the colleges is called to the importance of highway transportation, and the service they can render in training men to direct the expenditure of public money derived from taxation on roads that will carry the traffic of to-day and to-morrow.

The professors of civil engineering are urged to direct the attention of their students to this field of stabilized professional service and to inculcate ideals of public service as opposed to private gain. A sense of the high calling of the civil engineer in professional service needs stressing at the present time.

In order that the colleges may provide facilities and a trained staff for instruction and research in highway engineering, more ample funds must be provided from private sources, from cooperative efforts with industries, and from taxation. At present the colleges are staggering under an unexpected load, and are under emergency conditions.

Federal and State commissions should provide the salaries adequate to secure recruits for and retain the staff of our Federal and State highway organizations. Such salaries should be large enough to free the professional staff from the economic pressure of the industries, in which responsibilities less heavy and demanding less preparation are more amply remunerated.

Cooperation of colleges and highway commissions.—As a means of increasing the number of trained men available for the staff organizations of highway commissions and the Federal services, it is recommended that plans of cooperation be secured between the colleges and these organizations to provide for summer employment of students, which shall be related to the college instruction, and for further study by college graduates on the staff of the commission, either through part-time residence at the college or by extension classes operated by the colleges with the assistance of the executives of the commission.

A centralized body should supply information to the colleges of the opportunities and openings for engineering graduates in highway engineering.

The short courses, given by the colleges, to road officials of the county, are commended as a very fruitful source of inspiration and instruction leading to better road building and maintenance. In all this work the element of inspiration and of sense of responsibility should not be minimized.

Course of instruction.—The highway engineer deals with the public, and with the broad issues of State and national affairs. He needs a training in the fundamentals as related to modern life. He must also be an engineer trained to high technical standards, and in the method of work of the scientist. Therefore, the subjects of English, economics, science, and business relations are important. Training in technic should be thorough and severe. Highway-engineering subjects supply an excellent means of training in the several elements mentioned. A course in roads and pavements, extending throughout one year, is considered a fundamental subject in the civil-engineering curriculum. A special optional course, in the senior year, presents a situation where the student is interested, becomes motivated, has intimate contact with the professor; who is a competent practitioner as well as a teacher, and has an opportunity for library research and individual expression. Such specialization is highly educative, and the ordinary objections to so-called specialization do not obtain. The changing industrial and economic conditions are necessarily reflected in college curricula. The diminishing draft upon graduates for railway engineering may properly operate to adjust curricula which were devised a decade ago.

Research.—It is a matter of common knowledge that research workers receive an impulse to research and learn the methods and standards of research from a professor while undergraduates in college. When working under direction, results of value to industry are secured by these students. When research is planned and coordinated after several years, the results are substantial. The extent of the unexplored field of research in the design of pavements and in the properties of materials of construction as related to service conditions, combined with necessity of throwing early light upon these problems, calls for a mobilization of all the resources of the testing laboratories in equipment, research teachers, and student workers, and for an appropriation of some portion of construction funds to provide support for this research.

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CONFERENCE COMMITTEE ON HIGHWAY TRANSPORTATION EDUCATION.

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Chairman Good Roads Board, American Automobile Association.

Secretary, Arthur H. Blanchard,
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J. W. Witt, vice president National Highway Traffic Association and president Nagle, Witt, Rollins Engineering Co., Dallas, Tex.

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EDUCATIONAL SUBCOMMITTEE.

A. H. BLANCHARD, secretary.
EMORY H. JOHNSON, associate.
JOHN WEBER, associate.

PROGRAM OF THE CONFERENCE COMMITTEE.

1. What number of men is it estimated will be required by the automotive industries in the following fields in the next five years and, in a general way, what should be their different educational requirements?
   - (*a*) Automotive engineers in research and design work.
   - (*b*) Sales engineers.
   - (*c*) Advertising, business administration, and office work.
   - (*d*) Motor-truck fleet managers.
   - (*e*) Shop foremen, skilled mechanics ,and inspectors.
   - (*f*) Highway transport engineers in highway departments.
2. How many colleges should undertake this work?
3. How much highway engineering should be included in the highway transportation course?
4. How many years of study and how many hours per year should be given in these courses?
5. Should this work for the mature men be undertaken in special advanced courses outside of the usual university courses?
6. How much training is necessary in the vocational field? Should the industry undertake to train these men or should the work devolve upon automobile schools?
7. High-school education.
8. Resolutions or reports summing up the viewpoint of the committee on these subjects.

Report of Proceedings of the Conference Committee.

Chairman: **Arthur H. Blanchard.**

DIGEST OF DISCUSSIONS ON THE TOPICS INCLUDED IN THE PROGRAM.

1. What number is it estimated will be required by the industry in the following fields in the next five years and, in a general way, what should be their different educational requirements?

(*a*) *Automotive engineers in research and design work.*—Based on an estimated annual production of 300,000 motor trucks and 2,000,000 touring cars, the general consensus of opinion was to the effect that 1,000 automotive engineers for research and design work should be graduated each year by universities and that these men should be trained through the medium of four years' mechanical engineering courses which include automotive engineering options.

(*b*) *Sales engineers.*—It is conservatively estimated that 3,000 men should be trained each year as sales engineers. It was pointed out that men in this field should sell transportation as well as trucks. It was not considered that undergraduate college training was necessary but that it was desirable. In order to acquire knowledge of highway transport these men should be trained through the medium of short-period advanced courses in universities specializing in this subject.

(*c*) *Advertising, business administration, and office work.*—The opinion was advanced that not less than 200 advertisers should be trained each year along the lines advocated for sales engineers. Several officials of motor vehicle companies expressed the opinion that men who will occupy executive and administrative positions should be broadly trained college graduates who had specialized in economics, business administration, and similar subjects, and who had later taken graduate short-period courses in highway transport. For routine office work it is considered that a high-school training followed by special training in commercial schools would provide a satisfactory educational equipment.

(*d*) *Motor-truck fleet managers.*—It is conservatively estimated that 1,000 men per year should be trained for these positions. During the next five years at least 90 per cent of this number should be trained in universities through the medium of short-period advanced courses in highway transport, while from 50 to 100 men per year should be trained by attending four-year highway transportation engineering courses.

(*e*) *Motor-truck operators.*—The development in the utilization of motor trucks and available statistics was the basis of the conservative estimate that 200,000 operators should be trained each year in plants, vocational and automobile schools.

(*g*) *Highway transport engineers in highway departments.*—It is recommended that engineers for these positions should have had training in the field of highway engineering, and should take short-period courses in highway transport. It is estimated that 175 per year will be needed for positions in State, county, and municipal highway departments.

2. How many colleges should undertake this work? It was the consensus of opinion that 10 universities, located in different geographical sections of the United States, should offer short-period advanced courses in highway transport, and four-year courses in highway transport engineering or highway transport options in four-year collegiate or technical courses.

3. How much highway engineering should be included in the highway transportation course? It was generally agreed that not less than 30 lecture hours should be devoted to the fundamentals of highway engineering for men specializing in highway transport.

4. How many years of study and how many hours per year should be given in these courses? It is conservatively estimated that men specializing in highway transport should devote the equivalent of one collegiate year to work in this field.

5. Should this work for mature men, be undertaken in special advanced courses outside of the usual university courses? The answer to this question was unanimously affirmative. It was pointed out by several representatives of the industry that the University of Michigan's plan of offering a series of two-week courses during the winter meets the demand for short-period advanced courses in highway transport.

6. How much training is necessary in the vocational field? Should the industry undertake to train men or should the work devolve upon automobile schools? Those who had had experience in this field of educational work stated that 35 hours per week for four to six months was required for training in this vocational field. It was recommended that industry and vocational schools should work out an effective and cooperative educational plan.

7. High-school education. It was the consensus of opinion that pupils in grammar and high schools should be taught traffic regulations and the fundamentals of highway transportation as it affects daily life.

HIGHWAY TRANSPORTATION ENGINEERING CURRICULA.

Discussion by ARTHUR H. BLANCHARD, professor of highway engineering and highway transport, University of Michigan, and president National Highway Traffic Association.

In the opinion of some, highway transport may not be considered as belonging both to the field of technical training and education. On sober thought, however, it will be seen that this branch of knowledge comes well within the classic definition of engineering embodied in the royal charter of the Institution of Civil Engineers of Great Britain, which, in part, is as follows: "The art of directing the great sources of power in nature for the use and convenience of man as the means of production and of traffic in states, both for the external and internal trade."

Before discussing the subjects which should be included in a technical course for highway transport engineers, a brief résumé of the development of motor transport and highway improvement in England and the United States will be presented in order to give some indication of the possible demand for men trained in highway transport engineering.

In England, the improvement of the main county roads preceded the development of highway transport. When transportation of heavy loads of commodities over highways was inaugurated prior to 1890, England did not have to wait for the construction of highway systems, with the result that rapid growth of highway transport took place. As early as 1891, Fletcher, an English author, in writing on "Transportation on common roads," considered some of the classes of highway transport now under discussion in the United States and cited many instances of conflict between highway authorities and highway transport interests regarding some of the fundamentals of highway design. The writer, while investigating highway transport in England in 1909 and 1910, encountered the same problems with reference to highway transportation and legislation that exist in this country to-day. Pratt, in 1912, in his treatment of the subject of inland transport in England, presented many of the phases of the problem now confronting us with reference to what he called "Back to the land movement." It is evident that a thorough study of English highway transport methods and legislation would be of material benefit to American engineers and traffic managers who are striving to develop efficient highway transportation.

During the past decade the United States has witnessed a rapid growth in the utilization of the motor vehicle, as indicated by a registration of 125,000 motor vehicles in 1908 and 7,558,848 in 1919. While in 1909 a motor truck was rarely seen on American highways outside of municipalities, in 1919 not less than 750,000 were in use in the United States, motor trucks constituting from 10 to 20 per cent of the registered motor vehicles in the several States. Highway improvement has not kept pace with the increase in the utilization of motor vehicles. The fundamental basic axiom that economic highway transport is impossible without good roads should be fully recognized. A review of the present status of highway improvement in the United States indicates that there are about 2,500,000 miles of rural highways; that 12 per cent are classified as improved; and that about one-fourth of 1 per cent are suitable for trunk highway motor-truck traffic. Highway conditions will be materially improved during the next decade, as is indicated by the 1920 appropriations of about one billion dollars for highway improvements and the widespread demand for the construction of a system of 50,000 miles of national highways by the Federal Government under the direction of a national highway commission.

The breadth of training for highway transport engineers should be far more comprehensive than has been considered necessary for many technical branches. Breadth of knowledge is essential from a utilitarian viewpoint, as the highway transport engineer must, in many fields, deal with social and economic conditions, and must always have before him the fundamentals of sound business methods.

Comprehensive courses in highway transport engineering should include the following business and engineering subjects, in addition to the usual fundamental humanistic and pure and applied science courses contained in an engineering curriculum: Public speaking, elementary economics, social science, public utilities, commercial geography, agricultural economics, business, contract and transportation law, industrial management, business organization and administration, salesmanship, money and credit, cost accounting, insurance, history and economics of commerce, marketing and distributing systems, markets and prices, economics of railroad transportation, shopwork in wood and metal, machine elements, mechanics of machinery, fundamentals of gas and other engines, and electrical engineering, including ignition, starting, and lighting.

The highway transport engineer or manager also should have knowledge of all of the following special subjects: American and English highway transport methods; American and English highway traffic legislation and regulations; interrelationship of highway, railway, and waterway transport; highway transport surveys; highway transport management; costs and record systems; fundamentals of highway engineering affecting economic highway transport; and mechanism, operation, and maintenance of motor trucks, tractors, and trailers.

Highway transport engineering courses may be offered by technical institutions by utilizing several educational agencies.

First, the courses may constitute a fourth-year option in the civil, mechanical, or general collegiate curriculum. A review of the curricula of the three engineering courses mentioned indicates that 12 semester hours may be assigned in the fourth year to highway transport engineering without eliminating any fundamental engineering courses.

Second, a complete highway transport engineering curriculum may be arranged similar to the curricula of civil, mechanical, and electrical engineering courses. Such a course should include all of the humanistic, pure and applied science, business, engineering, and special courses previously enumerated. In this connection it should be pointed out that a four-year course devoted to highway transport engineering and highway engineering would provide an admirable foundation for men entering either field of engineering. Broadly trained highway engineers should have, in addition to the training in the fundamental humanistic, scientific, and technical courses, a knowledge of highway engineering, of the vehicles using highways, and of methods of highway transport.

Third, technical institutions may offer graduate engineering courses, which should be advanced specialized courses designed primarily for men who have taken a first degree in arts, science, or engineering, who have acquired a knowledge of the fundamental principles upon which such advanced courses are based, and who have had a certain amount of experience in engineering or highway transport work. It is evident that such courses should be given under such conditions that it will be practicable for engineers and others engaged in highway transport to take advantage of the opportunities offered. While the usual type of one-term or one-year graduate course may prove of value in some institutions, the writer is of the opinion, based on an experience with graduate courses for practicing engineers extending over a period of six years, that courses given in a concentrated form in short periods constitute the most efficient method of meeting the demand of practicing engineers for advanced technical training.

As a definite indication of the demand for such courses, it is of interest to note that during a period of five years there were 229 registrations in the graduate course in highway engineering at Columbia University, in which all subjects were given in periods of from two to three weeks. As far as amount and character of educational work are concerned, the 16 short-period courses which were previously given at Columbia University under the direction of the writer fulfilled the requirements for the degree of master of science. Columbia requires that each candidate for the master's degree shall be in residence for one collegiate year or eight months. Candidates for the master's degree in the graduate course in highway engineering fulfilled the requirement in one of three ways: First, by being in residence for one collegiate year, or from October to May, inclusive; second, by being in residence for two winter periods from December to March, inclusive; and, third, by the distribution of residence over several years by being in attendance for parts of three or more winter periods. Columbia further requires that each candidate for a higher degree must hold a baccalaureate or engineering degree from an approved institution.

In considering the development of graduate short-period courses, it is of interest to note the details of the records for registration for the 1915–16 session at Columbia. Twenty-seven American universities were represented by their graduates. The 50 men registered as graduate students were connected with the following fields of work:

State highway departments	8
County highway departments	5
Municipal highway departments	15
Consulting engineers' offices	6
Contractors' engineering organizations	11
University faculties	1
Engineering departments of companies manufacturing road and paving machinery	3
Engineering, research, and chemical departments of companies manufacturing road and paving materials	1

The widespread interest in this graduate course is shown by the following résumé of the localities from which the graduate students came at the time of their registration for the 1915–16 session: Denmark, New Zealand, Uruguay, Canada, Oklahoma, Connecticut, Massachusetts, New Jersey, Pennsylvania, New York, North Carolina, Texas, Oregon, Maine, Georgia, Louisiana, and Nebraska. It is of interest, as giving an indication of the character and maturity of the graduate students, to note that the ages of the men varied from 22 to 45 years, and that several of them, at the time of entrance upon the graduate course, were receiving salaries of $3,000 to $5,000.

At the University of Michigan, graduate work in highway engineering and highway transport, leading to the degree of master of science or master of science in engineering, has been arranged especially for men engaged in the practice of highway engineering and highway transport. Eighteen graduate short-period courses in the above subjects will be given during the months of December, 1920, to March, 1921, inclusive. Each course will consist of 30 lectures and will be given in a period of two weeks, and will count as two hours' credit toward the total of 24 hours required for the master's degree. This plan will afford highway engineers, chemists, contractors, engineer-salesmen, highway transport engineers and managers, motor-truck salesmen, and others interested in highway engineering and highway transport an opportunity to obtain advanced knowledge during the season of the year when leaves of absence may be easily obtained. These courses are open to graduate students and qualified special students. As indicative of the scope and content of the courses in highway transport, the following descriptions are given:

Highway transport surveys.—This course covers the subject of traffic classification and census, weights, speeds and dimensions of vehicles, highway factors affecting economic highway transport, investigations of highway routes, transport legislation and regulations, rural and urban transportation opportunities and competing carriers, including railways and waterway transport facilities.

American and English highway traffic legislation and regulations.—Legislation pertaining to weights, dimensions, and speeds of motor trucks, tractors, trailers, and motor buses; franchises for highway transport routes; rate legislation; national, State, county, township, and municipal laws, licenses, taxes, and traffic regulations.

Interrelationship of highway, railway, and waterway transport.—Development of highway, railway, and waterway transportaion; economic comparison of methods of transport of passengers and commodities; characteristics and efficiency of each type of transportation; influencing factors of distances, haulage, rates, kinds of freight, packing, equipment, and port, terminal, and warehouse facilities.

American and English highway transport methods.—History of American and English highway transportation methods; comparison of horse and motor transport; municipal haulage, municipal delivery systems, store-door delivery, intercity haulage, long and short haulage outside of cities, rural motor express, return-loads bureaus, motor-truck parcel post, plant and factory haulage, Army transport methods, horse transportation methods; efficient methods of packing, handling, loading, and unloading raw and manufactured materials.

Highway transport management, costs, and record systems.—Fundamentals of efficient management of the different highway transport methods; administration and organization of transportation companies; cost and record systems; elements of cost of operation of motor vehicles, including direct, overhead, and lost time charges; relation of highway to operating cost.

Highway transport seminary.—Library research, and preparation and presentation of reports, papers, and briefs. Assigned work on special problems relating especially to such subjects as highway transport economics; interrelationship of highway transport, good roads, and rural development; consumers' organizations; community schools and motor buses; effect of roadways on vehicles.

Mechanism, operation, and maintenance of motor trucks, tractors, and trailers.—Engines, including operating cycles, valves and valve timing, carburetion, ignition systems, oiling systems, cooling, rating, and characteristic curves; clutches; transmission and drive shafts; rear axles and differentials; front axles and steering mechanism; brakes and springs; engine and truck testing and performance curves; truck operation and control; truck maintenance.

While advocating the introduction of undergraduate and graduate courses in highway transport engineering, the writer wishes to place himself on record as opposed to educational institutions offering such courses unless their financial resources are such that they can secure specialists to give such courses and provide the necessary laboratory and field equipment. Also it should be emphasized that duplication of specialized courses in institutions located in the same geographical section of the country should be avoided. If this recommendation were universally adopted, educational resources could be conserved with resulting economy and material increase in the efficiency of specialized courses. It is believed that the high cost of the necessities of life, with the resulting demand that salaries of educators be materially increased, will force many institutions to seriously review their educational programs and to determine the fields in which they can best serve their communities and most efficiently fulfill their mission in the Nation's educational system.

PREPARATION OF MEN FOR SERVICE DEPARTMENTS.

Discussion by H. R. Cobleigh, Secretary, Service Division, National Automobile Chamber of Commerce.

With most articles of trade, once they are sold and pass into the hands of the user, the makers and sellers cease to be concerned. This is not true of automobiles. The manufacturer of a car is the creator of a responsibility. Throughout the useful life of the machine the owner is dependent upon the manufacturer directly or through the dealer for parts to replace those that wear out or are broken, and upon the dealer or independent repair shops for overhauls and repair work. This, commonly known as service, therefore constitutes a third branch of the industry, in addition to the two common to other lines, manufacture and sales. You have heard from others the needs in the way of education for factory and dealer personnel. It will be my purpose to set forth something of the need for the education of men to carry out the important task of servicing the ever-increasing number of motor vehicles.

On December 31, 1919, there were 7,558,848 motor vehicles registered in the United States, of which about 90 per cent were passenger cars and 10 per cent motor trucks. Exact figures are not yet available as to the number of men now employed in repair shops. Such figures have been collected in the recent census, but have not yet been tabulated. These will show the number in each of the various classes of occupation, such as service managers, testers, stock-room men, service salesmen, superintendents, foremen, mechanics, helpers, and laborers. For our purposes we may sufficiently closely estimate the total number now employed. There are reported to be 43,643 repair shops in the country. Assuming that the average number of men employed in each shop is five, a conservative estimate, for while the largest shops employ upward of a hundred men, the smallest have at least three, this would mean that 218,000 men are now employed in service work. Dividing this number into the total number of cars in use, we have about 35 cars to each man. Based on the rate of increase in number of cars registered each year, the probable number in use two years from now will be 12,000,000, and to service these, at the rate above arrived at, there will be needed 342,000 men, or 124,000 more than at present. Supposing that 10 per cent of the men now employed will be lost to the industry within two years by death, change of occupation, or other cause, there will be needed 22,000 new men to replace this loss, or a total of new personnel of 146,000 to be fitted for the various positions in the next two years. How well fitted they will be will depend on what measures are taken to educate them.

At present we are far from having sufficient efficient help. There is not only a lack of enough men, but many of the men now employed are perforce used because of want of better men. Probably our average is not above 50 per cent efficient. While 100 per cent is not attainable, by proper education we should be able to raise the standard of efficiency to at least 75 or 80 per cent. A college or engineering school education may not be essential to any considerable part of these men, but would be advantageous to the small percentage who fill the more responsible executive positions. General education comparing to graduation from high school would be necessary for a larger share of these men, as well as special training along lines of business or accountancy. The great bulk, however, are those needing vocational training fitting them as mechanics and for which the industry must look to the automobile schools, Y. M. C. A. courses, manual training high schools, and other institutions giving courses in mechanical trades. The further this preliminary education goes, the less it will be necessary to teach the men after they take up their work in the shops before they become of real use.

Less and less as time goes on will the higher executive positions be filled by men promoted from the ranks. Graduate engineers will find this field sufficiently attractive to enter it, and service as we know it to-day will take on a new standard. Indeed, it must for the continued prosperity of the industry. It is common knowledge that present-day service is far from what it should be. There is vast room for improvement, and this improvement is bound to come. The public demands it and the industry appreciates its necessity. The latter fact is attested by the interest that is being shown in service as evidenced by the recent creation of the service department in the National Automobile Chamber of Commerce. The engineering problems relating to design and manufacture that have so far engaged the makers are relatively near solution as compared with those involved in maintenance of the equipment on the road, and the latter problems will be those that in the next stage of our development will occupy the attention of the industry.

We must contrive ways and means for performing work in the service stations and repair shops that approach more nearly to the methods obtaining in the factories. If cars were built as inefficiently as they are overhauled, they would cost about four times as much as they do. Conversely, if they could be overhauled as efficiently as they are built, the work could be done for a quarter its present cost. While this ideal may not be attainable, certainly much can be done by concentrating the work in fewer larger shops, so that the volume of work handled would justify the installation of labor-saving machinery and the employment of processes that small shops can not afford. At the same time the employees, by specializing on the different operations performed, would become so expert that the labor costs would be greatly reduced. If the smaller shops would confine themselves to minor repairs and adjustments, sending units requiring rebuilding or overhauling to these specializing plants, the work could be done better, quicker, at half the cost to the owner, and with equal profit to the individual shops than is possible while the little shops attempt to do it all with inadequate equipment and less experienced help. Herein lies a practically untouched field of wonderful opportunity in which engineering talent might accomplish a great work along lines of more efficient organization, shop layout and equipment, motion and time study, special tools, training of operatives, etc.

Another evidence of the new attitude of increased interest in service is the number of service associations springing up all over the country, all of which have as one of the main purposes of their organization the promotion of means for educating the personnel to man the service stations and repair shops. The best brains are being attracted to this problem and results are bound to come. It will need men of engineering training to work out the methods and systems and a whole army of skilled mechanics to carry out the work.

I will not attempt to go into details as to what the mechanics' training should be. Opinions differ, but there are plenty who have studied the requirements who are ready to lay out curricula for the schools. The crying need is for more schools and instructors and better courses in existing schools. As a rule, the courses as so far provided do not go far enough. Obviously, skilled mechanics can not be turned out in six to eight weeks. An obstacle in the way of extending the period of instruction is the unwillingness of the students to spend enough time in school. Much must be done through publicity to inform the youth entering this calling that they must be prepared to devote longer time to their preliminary education. The future employers of these men stand ready to help them overcome the hardship of a prolonged nonearning period by cooperating with the schools so that the students may divide their time between the shops and the schools, letting them get the theory in the schools and apply it in the shops to get the practice, so that they may be earning something while continuing their education.

In a nutshell the situation is this. The industry has grown at a rate that has outdistanced its ability to develop for itself enough competent men of all grades to fill the places open to them. A negligible portion of the men now carrying it on contemplated entering it when they were in school. In other words, nearly all were educated for their present work within the industry. It is becoming increasingly difficult to continue to do this. Just here I should like to mention that to which I ascribe the shortage of college-trained engineers throughout the automotive industry. It is this, that fathers with sons to educate and sons considering what lines of study they will pursue so far have had little appreciation of the possible future for them in this industry. Twenty years ago the field of great promise was electrical engineering, and boys of mechanical bent were advised on every hand to make this their life work. Before that civil, mechanical, and mining engineering attracted the ambitious youth, unless their proclivities inclined them to the still older professions of medicine, the ministry, or law. Since then chemistry has had its turn as the popular lure. Now it is high time that our second largest manufacturing industry be held up as a deserving goal for the rising generation.

So we turn to the educators for their assistance. We submit that we have an industry meriting their keenest consideration. We look to them to direct the attention of those coming to them for instruction to the worthiness of this field for their future activity and to offer them those subjects that will best fit them to enter upon careers in the automotive industry.

So much stress has been laid on the need of men of advanced training that I would impress as my last thought that no army is composed entirely of officers. Privates in the ranks are needed, 20 or more to every officer, so, from the service point of view, we are asking what can the education do to give us more real mechanics so that we may decrease the cost of car maintenance and give the public the service to which it is entitled?

EDUCATION OF SALES ENGINEERS, FLEET MANAGERS, MECHANICS, ETC.

Discussion by F. W. DAVIS, Consulting Engineer, The Pierce-Arrow Motor Car Co.

These remarks will refer mainly to the requirements and training of men in transport engineering as bearing on the operation of fleets and trucks, of men qualified to take care of maintenance, of shop foremen, of trained mechanics, of men who are sales engineers, and of men who can go out and present the transportation problem in an intelligent manner.

The company with which I am connected has found a great need for men in the transportation and service end, and we have conducted, in the past two or three years, courses at the factory where we have taken a certain number of men, in some cases men having had technical training and in some cases men who are mechanics and who have been in the factory and whom we have found suited to advancement in a particular field. We have given such men a short, condensed course of three months, covering both lectures and mechanical work in the factory. We thus fit them to go out as sales engineers, transportation engineers, and men who can take executive positions in the operation of transportation departments. That covers the transportation end; then the other end is the service function, which has to do with the shop foreman, fleet managers. inspectors, and highly trained mechanics. The number of men we take into that are about equal to the others. That course extends over about six months. These men have had very considerable practical experience up to that period. They are in every sense mechanics, not necessarily skilled in all branches. We put these men through this six months' course and at the end of that time they are able to go out and take actual charge of our so-called agents' shops. They are able to take over the handling of large fleets; they are able to fill the position of inspector, which is also highly important, and bears a very definite relation to the so-called locomotive inspector. The others are the trained mechanics, who are able to handle the work which comes to the repair shops. We can put 50 men per year in the transportation branch per 5,000 vehicles and an equal number of 50 men in the service end per 5,000 vehicles.

The Society of Automotive Engineers has recently formed a committee, of which I am a member, for actually looking into what we call the science of truck operation. It is an attempt to formulate certain underlying economic principles bearing on highway motor transportation in comparison with railway, waterway, and horse transportation, and in that way to develop certain material, collect statistics, and to make available for our use, not only in the small endeavor that we have undertaken in our plants, but also more or less to give out to those technical colleges which are going into this subject of highway transport engineering. So much for the actual acquiring of that information. The information at the present time is more or less scattered. It is in the hands of a few, but the Society of Automotive Engineers and the manufacturers will be very willing not only to lend their time and their best efforts to collecting and tabulating this information, but when it is available and when the courses are mapped out in the colleges, men from the companies and from the society will be very glad to volunteer, certainly at the start, and possibly for more or less continuation, in order to go before the various technical colleges and present this material. That is, they will be willing to volunteer, to a more or less degree, to conduct some of the courses in transport engineering, not because instructors are not able to handle it, but because the information is so vague and scattered that it is not available for the average college instructor to secure himself. The Society of Automotive Engineers is going to take the material which is collected and print it in some form and thus make it available for anyone who may want to use it.

QUALIFICATIONS OF HIGHWAY TRANSPORT ENGINEERS.

Discussion by ERNEST FARR, Chief, Firestone Ship by Truck Bureau.

In submitting the following suggestions we desire to explain the source of our information and the methods by which it was obtained. It is based on the experience of more than 100 men, operating Firestone Ship by Truck Bureaus in 65 different districts throughout the country and devoting their entire time to the collection and dissemination of information on motorized transport. The statistics come from the research division of the Firestone Ship by Truck Bureau, which is engaged exclusively in collecting and correlating information on highway and transport conditions for the use of the general public.

This bureau has been in active operation for more than a ye
It keeps up-to-date information on approximately 2,000 highw
routes between cities and into rural districts. These routes cov
about 20,000 villages and towns. Listed with these bureaus are mo
than 6,000 truck operators, either running on schedule between th
towns or subject to call for special trips upon these routes.

One of the main objects of the bureau from its inception has been to train the managers of its various branch bureaus to become highway transport engineers. So we offer the following thoughts as the result of our practical experience along this line:

Qualifications.—To meet the needs of highway transport to-day a man must be trained not only in the fundamentals of practical roadbuilding, but also be mentally equipped to investigate and reach proper conclusions on motor transport, traffic, and highway problems of the particular community in which he may be located.

The economics of the motor car, its possibilities and limitations; the trend and direction of urban and suburban traffic, how to anticipate it and prepare to relieve congestion; the weight and volume of traffic and the type of highway that will be best suited to it; local geological conditions and the climate as they affect the construction and maintenance of roads must be a part of his training. Mechanical upkeep, operating economics, and types of motor vehicles and their adaptability are also among the subjects in which he must have special instruction.

The field.—The field for a man specially trained in highway transport engineering would include Federal, State, and county offices, and positions with large cities; industrial organizations operating big truck fleets; large motor service operators; truck manufacturers and distributing organizations; and ship by truck bureaus and organizations of a similar nature.

The future.—The growth of highway motor transport is limited only by the construction of good roads and the production of motor cars. That limit is not yet in sight. The trained highway transport engineer could create his own opportunities. His special training would command attention and direct public opinion to highway transport. Heretofore it has lacked proper and effective presentation to the public.

Public attention.—In order to bring a fuller understanding of the need for specially trained highway transport engineers it seems to be necessary to concentrate public opinion on the need of good roads, and educate the people on the transportation possibilities of the motor truck. The call for specially trained men will naturally follow.

The Firestone Ship by Truck Bureau has by demonstrations, national advertising, and various means of publicity, and especially by local application, been carrying on this work of education for more than a year.

Its bureau managers are supplied with information and statistics on the advantage of good roads and motor-truck service. News, instructive and interesting, has been supplied to the newspapers and magazines, showing just how highway transport has added to the health, happiness and wealth of communities. Books and pamphlets, showing the advantages of ship by truck, giving advice to prospective motor car purchasers and outlining methods and costs of operation, are distributed. The policy behind this has been not to merely make sales for the manufacturer or improve any and all roads indiscriminately, but to put the whole highway transport business on a scientific and economic basis. Individuals or communities are not advised to invest in motor transport or good highways unless they will receive a continuous economic advantage by so doing.

General.—For example, the Firestone Ship by Truck Bureau has had applications from farmers' organizations, such as fruit growers' exchanges and cooperative associations, asking for solutions of their transportation problems. Should they purchase one truck, or half a dozen? What should the equipment be and where should the roads be improved? We sent a highway transportation expert into their districts. His work for a Michigan fruit growers' exchange is typical. He investigated and found that one 2-ton pneumatic-equipped truck and four trailers would serve the fruit growers in rush as well as in slow season and do it economically and with the smallest initial investment. He arrived at his conclusions by examining the roads, the location of the farmers to be served with respect to the community packing plant, the amount of fruits handled each day, and the maximum amount that their profits would permit them to invest. His recommendations were adopted with gratitude by the farmers and when put into operation will save them from 1 to 3 cents a crate in transportation charges. And the number of crates handled runs into thousands a month. That particular episode, it seems to us, might well be part of a college-trained highway transport engineer's job. There are thousands of groups of farmers and small shippers in this country awaiting accurate and truthful information on how to solve their transportation problems. The highway transport engineer with proper training can do it, not only to his own and the farmes' benefit, but to the great benefit of the whole community.

The automotive industry could use specialists in highway transport to great advantage. With their special training they could accurately define the needs of customers, thus giving greater service. This is also true of large fleet operators. Selection of the best routes, the type of equipment to meet particular needs and economizing in operation would fall within a highway transport engineer's duties with an organization operating many trucks.

As to specific recommendations on what changes ought to be made in present college courses, or whether an entirely new course ought to be offered, it seems to us that such a decision should be left in the hands of the educators. Here we are attempting to tell what kind of training the industry can use. How schools and colleges can equip men to meet these needs can be worked out best by the educators themselves.

MOTOR TRUCK FLEET MANAGERS.

Discussion by CLYDE JENNINGS, Managing Editor, Automotive Industries.

In discussing the demand for motor-truck fleet managers, several men who have given this subject mature consideration have called my attention to the fact that the average cost of a truck is about $3,000, and that a person with five trucks has an investment of $15,000, and more than likely an additional investment of $15,000 in garage and equipment, making a total of $30,000 for the average fleet of five trucks. This investment naturally leads the owner to put a special man in charge. From the same authorities I learn that there are about 20,000 such fleets in this country. It is estimated that there will be an increase in these fleets of at least 5,000 within a year. It is presumed that the increase will be heavier in subsequent years.

With a fleet of ten 5-ton trucks, costing on an average $6,000 each, and an additional investment, including turnover of tires and so forth, of an equal amount, the total investment would be $120,000 a year, without counting the cost of a garage. It has been suggested that a fleet of the size I have mentioned would need a transportation manager as a general director; a delivery superintendent to see that all trucks were properly loaded; a maintenance superintendent in charge of the garage and all repair work; an operation superintendent in charge of the drivers and the routing; and a cost accountant to collect and compile analyses of truck costs. All of these men would need special motor-transport training. A managerial personnel of this character would suffice to govern almost any sized fleet, but as the fleet grew the various superintendents would begin to require assistants. It is as yet an unanswered question as to the number of specially trained men who would be needed as the fleets grew larger.

EDUCATION FOR HIGHWAY TRANSPORTATION WORK.

Discussion by LEE LAMAR ROBINSON, Transportation Section, Council of National Defense.

One of the outstanding features of this movement, as I see it, will be its psychological results. Groups, large or small, ranging from the youthful helper on the motor express truck or in the repair shop of the service station to the college student and the young engineer, discussing the benefits of a two or four or nine weeks' course, as the case may be, will almost certainly grow enthusiastic over the opportunities offered, and will desire to take advantage of such opportunities. Like the endless chain, each worker whether he be on the truck, in the shop, or with a leveling instrument on the highway, who has taken some one of the courses, will want to tell his fellows what he is doing in an educational way, and will manifest a natural pride in his accomplishments. In this way the demand for opportunities to participate in some of the courses under consideration at our conference will spread almost without limit.

The courses suggested in our conference will not only be of economic value to the Nation, but prove of great utility in time of war.

A great thirst for knowledge has been manifested since the war, such as was never known before in this country. Records of all colleges will bear out this statement. We must not forget that the highway engineers of to-morrow are the boys in the public and preparatory schools and the colleges of to-day. In view of this fact, the extension of the manual training idea to take in a primary course in civil engineering should not be postponed in the schools. This course should include, for example, something on construction and maintenance of highways, and mechanical engineering, including the building, maintenance, and operation of the machine traveling over the highways.

Instruction in safety measures on highways should be given to children in the various schools. Working with men of experience, I was able, in connection with my duties in the Council of National Defense, to aid in drafting regulations and directions regarding the subject, and also, to sound the sentiment of the country regarding the same. It should be comparatively easy, in view of the sympathy of the public and of school directors and teachers in this movement, to map out a program under which instruction of this character could be made a definite part of the work in the public schools.

The Council of National Defense has made a survey of highway and highway transport conditions throughout the entire world, with the result that information of almost inestimable value has been compiled. A digest of the returns received from probably 74 United States consular districts throughout the world should also be of value.

ECONOMICS OF HIGHWAY TRANSPORT.

By R. C. HARGREAVES, District Manager of the Goodrich Tire & Rubber Co., Detroit, Mich., and Vice President National Highway Traffic Association.[*]

The invention and distribution of automotive vehicles suitable for transport have been followed by a great era of road building. The further development of highway transport and of highway construction will doubtless be controlled by the same economic forces which have been in operation during the past. By combining the vehicle and the properly established route we are enabled to develop not only one trade route but thousands of routes of trade influence and commerce within our shores. In the words of Senator Harding, transportation "is the one agency of putting every community in the Republic on the way of commercial progress."

The history of transportation shows that as new trade lines were brought into existence new trade centers were established. The prime motive back of these activities was commerce, the basis of all human progress. To-day "the constructive machinery of civilization and progress" is the automobile which meets a fundamental need of our modern life.

On account of the present lack of adequate highway transport facilities, a large number of our rural population are deprived of educational opportunities. Likewise, crowded cities are hurt by hunger on account of food shortage when proper highway transport might bring the food products from near-by acres without serious delay. Highway transport may also serve those who live in congested city quarters by offering more ideal living conditions in near-by villages. The tool for improving rural life in all its phases, and consequently the means of keeping the country sections from gradual depopulation, is an adequate system of highway transport.

Herbert Hoover has said: "The rural motor express development which aims to provide efficient transportation between rural areas and consuming centers and rail and water terminals is, I believe, in the line of progress, and will bear large returns to producer, consumer, and carrier," etc.

The following item quoted from an English journal is significant:

> The market towns of Newbury and Andover, which are 17 miles apart, have been linked up by motorbus, the opening of the new service being inaugurated one day last week. The two towns are poorly served in the matter of intercommunication and, as they are on different railway systems, the circuitous train journey occupies three hours. The motorbuses complete the journey in 50 minutes at a charge of 2s. 6d. as against the railway fare of 3s. The service is to be run every two hours, starting and ending at 8 o'clock, morning and evening.

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[*] From an address made before the annual meeting of the Michigan State Good Roads Association. 1920.

Now, consider for a moment the case of two towns, and call them Tyre and Sidon. For the towns I have in mind are as inconspicuous to-day as those of the same name in the old world were before transportation made them famous as trade centers. With highway transport available, a trade route would be established between the two, and these towns would in time become established as trade centers. Assume that it were possible to establish any one of three routes between these two towns, what direction would it take and how about its profile? Without a scientific study of the possible trade development along the route, the efforts of the ablest engineer would be unsatisfactory. How much expense is justified in shortening the distance of the route 2 miles—reducing the grades one-half—eliminating curves—and in providing the most efficient type of road surface? What of the width now, and in 10 years; of snow removal to permit brisk trade 365 days in the year; or a snow embargo preventing a proper range of industrial activity to enter the trade centers, which activity would be dependent on 365-day roads?

These are a few of the problems—there are yet many more. And all of these problems I think of and study over as being included in this subject, "Economics of highway transport." And are these not even greater problems than the ones of construction we are usually battling with? True, we may know little about the bearing power of soils or the action of clay with or without water in suspense. But I believe we will know a great deal of such matters before we really make a start with the larger economic problems, because one is of the type that can be taken into the physical and chemical laboratory and expressed in the form of mathematical equations, and the other takes one into the laboratory of human life and experience and involves the personal equation.

In the future a tremendous growth and strengthening of the towns and villages of our land will doubtless take place. Even from the standpoint of foreign trade alone, it is the people of the towns and small cities in the country who should be vitally interested. For only consider that in 1919 $3,500,000,000 of foreign trade—about 45 per cent of it—was made up of fruits, cereals, vegetables, meats, eggs, and butter. This means a great deal to the towns and villages. And from the standpoint of manufactured articles, consider that it has been stated that over 50 per cent of the manufactured goods that go to buyers outside of the United States are produced in towns having a population of 50,000 or less. Imagine, then, countless villages and towns linked up by trade routes, growing steadily as trade centers, looking up in turn to the more natural centers of larger trade influences. At such points highway transport will be joined to our great steam and electric-rail system.

Hand in hand they must go, articulating perfectly. Rail transportation as the great roughing-out tool, used for first entering the heart of a country, and large section and highway transport as the light finishing tool for shaping the rapid improvement and development of the large tributary areas. What promise there is ahead in this country of ours. Arteries of commerce. Webster says of an artery, that it is a vessel carrying blood from the heart and a continual channel of communication. This, then, is the challenge laid at our door. To pick up the tool—highway transport—and apply it properly; to build arteries of commerce with channels uninterrupted despite rains and snow, so that commerce, the very life blood of our Nation, may flow with more certainty back and forth from ports to big cities, and on through to the towns and villages of our land, the very heart of our country.

RESOLUTIONS OF THE CONFERENCE COMMITTEE ON HIGHWAY TRANSPORTATION EDUCATION,

ADOPTED MAY 15, 1920.

Whereas the phenomenal development of highway transportation in the United States has created a demand for men having knowledge of and training in a new technical field, which may be designated highway transport engineering, and which deals with the science, art, economics, and business of transporation of passengers and commodities over highways; and

Whereas the manufacturers and users of motor trucks, in this conference assembled, have stated, first, that four thousand men should be trained in highway transport each year in universities for positions of motor-truck fleet managers, sales engineers, advertisers, business administrators, and highway transport engineers; second, that short-period advanced courses efficiently provide opportunities for men occupying the positions enumerated to obtain a knowledge and training in highway transport; third, that students in universities may be trained for the above-mentioned positions through the medium of four-year courses in highway transport engineering or group options in collegiate or technical courses; fourth, that one thousand automotive engineers, required each year for research and design positions, may be trained through the medium of four-year mechanical engineering courses which include automotive engineering options; fifth, the training of two hundred and fifty thousand men, required each year for the positions of shop foremen, skilled mechanics, inspectors, and motor truck operators, may be efficiently given by vocational automobile and factory schools; and

Whereas the need is daily emphasized in every highway department throughout the land of highway transport engineers, whose sole activity shall be the practical application of highway statistics and service tests so far as the same are valuable not only in the regulation of traffic, but to the scientific design and operation of highways and motor vehicles: Therefore be it

Resolved, That this conference strongly recommends that universities and colleges offer courses in highway transport as their facilities will permit, and that at least 10 universities, located in different geographical sections of the United States, offer short period advanced courses covering the various phases of highway transport, and four-year courses in highway transport engineering or highway transport options in four-year collegiate or technical courses.

Whereas the fundamentals underlying the ideals and accomplishments of tomorrow must be implanted in the hearts and minds of school boys and girls of to-day; and

Whereas the avenues of transportation have carried civilization around the world and administered to the wants and comforts of all: Therefore be it

Resolved, That the underlying principles of highways and highway transport, as well as the rules of the road, be taught in the grammar schools and high schools of the Nation; and

Whereas it is desirable that those boys and girls who are naturally best fitted to carry on this most important work be selected scientifically and carefully with a view of the widest possible advantage to the Nation: Therefore be it

Further resolved, That vocational guidance be given in every grammar and high school in the land with a view of particularly selecting for all professions and activities, and particularly with reference to highway transport, those boys and girls who show unusual proficiency and appreciation of the vast problems of highway engineering and highway transportation.

A. H. BLANCHARD, *Secretary*,
Professor of Highway Engineering and Highway Transport, U. of Michigan.
EMORY R. JOHNSON, *Associate*,
Dean, Wharton School of Finance and Commerce, University of Pennsylvania.
JOHN WEBER, *Associate*,
Associate Professor of Mechanical Engineering, University of Pittsburgh.

THE CONFERENCE COMMITTEE ON BUSINESS EDUCATION AND HIGHWAY ENGINEERING AND TECHNICAL RESEARCH.

Chairman, A. F. Woods, president, University of Maryland.

Secretary, George F. Zook, specialist in higher education, United States Bureau of Education.

PERSONNEL.

R. D. Chapin, president, Hudson Motor Car Co.

H. R. Cobleigh, secretary, service division, National Automobile Chamber of Commerce.

H. W. Davis, consulting engineer, Society of Automotive Engineers.

A. T. Goldbeck, Bureau of Public Roads, Department of Interior, Washington, D. C.

M. L. Heminway, manager, Motor Accessories Manufacturers' Association.

L. J. Hewes, inspector of roads, Oregon.

Charles S. Howe, president, Case School of Applied Science, Cleveland, Ohio.

Prevost Hubbard, Asphalt Association, New York.

C. D. Jarvis, specialist in agricultural education, Bureau of Education, Department of Interior, Washington, D. C.

Pyke Johnson, National Automobile Chamber of Commerce, Washington, D. C.

W. V. Logan, United States Tire Co.

G. F. Zook, specialist in higher education, Bureau of Education, Department of Interior, Washington, D. C.

EDUCATIONAL SUBCOMMITTEE.
CHARLES S. HOWE, chairman.
A. T. GOLDBECK, associate.
GEORGE F. ZOOK, secretary.

REPORT OF THE EDUCATIONAL COMMITTEE OF THE CONFERENCE SECTION ON BUSINESS EDUCATION AND HIGHWAY AND TECHNICAL ENGINEERING.

The conference committee had under consideration the problem of research in highway engineering and in technical engineering. It also considered the question of business education as a preparation for persons who might be employed in the automotive industries.

1. *Research.*—The committee first considered the question of research in highway engineering. It developed at once that research in the problems of highway engineering is an extremely important matter. Large sums of money have already been appropriated by the National and State Governments for the purpose of building

highways. As yet, however, many of the problems concerning the proper construction of highways remain unsolved, and before we may expect to build highways that will stand up under the new traffic conditions it will be necessary through research to determine how these highways should be built. At present only a very small portion of the sums appropriated for the building of highways may be used for research. Research is necessary not only to determine the character of the construction of roads according to the type of traffic that passes over them, but also to discover the kind of highways which should be built to withstand the climatic conditions in the several parts of the country. For instance, highways in the Southern States probably need to be of extremely different character from those which are built in the Northern States.

In the field of technical engineering, connected particularly with the automotive industries, it developed that the stimulation of research was not so necessary. For a long time research has been going on in the field of design and fuel in the automotive industry, and this work is still being carried on sufficiently.

The new field of research in highway transportation economics needs serious attention in the future. It is, for instance, a great problem to determine what is the cost of transportation by motor trucks and to what extent motor trucks should be used to replace other forms of transportation. It was agreed, however, that this research could be attempted only in the automotive industries themselves. On the other hand, it is highly desirable that colleges and universities train men in the methods of research who could later be employed in this field by the automotive industries.

One of the important problems which presented itself was that of coordinating the research in highway engineering problems at the various colleges and universities. Some colleges and universities are much better able to undertake the solution of those problems which concern that section of the country in which it is located. It was suggested, therefore, that there should be as much coordination as possible in the research in highway engineering problems which it is hoped will be conducted at the various institutions of higher learning. Mention was made of the admirable work of the National Research Council in attempting to stimulate and coordinate research work in all fields. It was the unanimous opinion of the committee that there should be some central body to stimulate and supervise research in highway engineering and transportation problems throughout the various colleges and universities which were in a position to undertake this research.

2. *Business education.*—The discussion of business education revealed the wide opportunities which there are in this field to add to the efficiency of the automotive industries. It developed that it was

highly desirable for a large portion of the persons connected with the automotive industries to have an adequate preparation in business courses which would enable them to undertake managerial positions, where they would be able to coordinate the work of the various branches of the industry.

In the discussion of this topic it appeared that much work of a valuable nature could be undertaken even in the elementary and secondary schools, where students could be taught elementary business forms and practices, which in time would assist them to accept positions of responsibility in industries.

In the colleges and universities it was pointed out that three fields of opportunity are open for a greater number of business courses It has now become generally recognized that graduates of engineering schools are much more valuable to an industry when they are acquainted with those fields of business education which will enable them to coordinate the work of the various departments of an industry. Recently also there have been established a number of schools of business and commerce, whose graduates may find ample opportunity to accept important positions in the industries. It was suggested that students in liberal arts courses should be given an opportunity to pursue a number of courses in business and commerce and also in engineering, in order that they may be able to undertake important positions in the industries. Graduates of business courses and of courses in arts and sciences may be used in considerable numbers in industries that are generally regarded as technical in nature.

RESOLUTIONS OF THE COMMITTEE ON RESEARCH AND BUSINESS EDUCATION.

In view of the fact that a large volume of materials formerly transported by railroads is now carried over the highways, resulting in a great increase in weight and volume of freight carried by motor trucks, and in view of the lack of knowledge concerning many of the fundamentals of highway construction to take care of this traffic, and in view of the enormous sums now being expended and to be expended in the future for road construction, it is the sense of this conference:

1. That research in highway engineering and highway transportation problems is necessary to secure highways capable of carrying the traffic which will pass over them in the future.

2. That a moderate number of colleges and universities properly equipped and located in various sections of the country should be urged to undertake research in highway engineering and highway transportation for the purpose of training undergraduates in the methods of research and solving the problems of highway engineering through competent graduate research.

3. That this research should be directed by some central authority, which should have power to call to its assistance other agencies and organizations capable of giving advice on this subject.

4. That sufficient funds should be raised and placed in charge of this central body to carry on this research.

5. That this central body should have the power to invite the cooperation of State highway departments, of colleges and universities and experiment stations, and to assign to these cooperative agencies funds for the prosecution of this research, and to supervise and direct the conduct of the work.

6. That in addition to these funds the National Government be urged to appropriate generous funds for research in highway engineering and highway transportation, and that each State set aside a definite portion of the funds appropriated for highway construction for the prosecution of research in highway engineering and transportation.

7. That the State highway departments should, wherever possible, seek the cooperation of colleges and universities and experiment stations in solving research problems in highway engineering peculiar to the State concerned.

RESOLUTIONS REGARDING BUSINESS EDUCATION.

1. That the largest possible opportunity be given to students in the elementary and secondary schools to learn simple business forms and practice, bookkeeping, commercial law, elementary banking, and elementary practical economics in order that this training, together with practical experience, may enable them to advance into positions of responsibility in the industries.

2. That the conference indorse the idea of a liberal opportunity for engineering students to take courses in business education which will train them for managerial positions in the industries.

3. That the conference favors the establishment of schools of business and commerce in which students, in addition to numerous courses in business and commercial economics, may secure such technical and general training as will fit them for leadership in industry.

4. That the colleges of arts and sciences encourage the placing of courses in business economics on a par with humanities in order that graduates of these colleges may take their places in industries speedily and intelligently.

CHARLES S. HOWE, *Chairman,*
President Case School of Applied Science.
A. T. GOLDBECK,
Bureau of Public Roads.
GEORGE F. ZOOK, *Secretary,*
Bureau of Education.

PROCEEDINGS OF THE CONFERENCE COMMITTEE ON BUSINESS EDUCATION AND HIGHWAY ENGINEERING AND TECHNICAL RESEARCH.

Chairman: DR. A. F. WOODS.

CHAIRMAN. I believe that it is unnecessary to make any opening statement as to our discussion this afternoon. I understand that we should discuss the subjects of business education and highway engineering and technical research in their relations to the general problem outlined in the morning session. Certain gentlemen have been requested to open the discussion of these subjects, beginning with the consideration of highway-engineering research. Mr. Goldbeck will open the discussion.

Mr. GOLDBECK. Before approaching the subject of research in highway-engineering courses, it will be well to stop and consider the object of research work as undertaken in colleges. Primarily every subject in engineering courses should be studied for the purpose of mental training or to add to the general or special knowledge of the student so that he will be better fitted for carrying on his life's work, and it is highly desirable that such research work as may be undertaken will at least aid in serving this purpose. Undergraduate research, first and foremost, should be of benefit to the student. So far as benefit to the highway-engineering profession is concerned, it may be said that research work in engineering colleges should be conducted with this in view, but that this purpose should be regarded merely as of secondary importance.

Highway engineering and highway transport are still in their infancy, and there are numerous problems which must be solved before we shall have attained that degree of perfection in the art of road building and highway transportation so greatly to be desired. These problems, in the main, can be solved only by thorough and conscientious study and research in the field and in the laboratory. Many of them are far too big to be undertaken in the short time allotted to thesis work in engineering courses, but nevertheless most of the major problems are capable of subdivision into minor problems requiring a comparatively short time to solve, and such problems when solved, assembled, and digested will give the answer to the big, main problems being studied.

Would it not be well to have these major problems thoroughly outlined by some suitable agency, such, for instance, as the engineering division of the National Research Council or by a committee of the American Association of State Highway Officials? Let these problems be subdivided into the minor sections requiring solution, and let the research work of the colleges be conducted toward the end that the solution of the minor sections of the big, main problems may be obtained. The statement of the problem in detail would be of great educational value to the student and would give him a clear conception of the goal to be attained. His interest in the solution of his part of the program would be stimulated by having the same problem assigned in several institutions, and in this way the various students or groups in the various institutions at work could compare their final results. They would be thus urged toward accurate observation and careful work. The very fact that groups in various colleges were working on the same problem would add to the value of the results obtained, since it could very readily be determined whether the results could be accepted as being of value or be rejected because of inconsistencies. It would be my idea that some central body or committee in cooperation with the colleges could see that the problems were distributed to the various institutions so that there would not be too much duplication of effort. There should be some duplication, however, and the same problems should be repeated over several successive years. The results thus obtained might be of some value to the engineering profession.

The fact that the student is made to feel that he is cooperating in a big national research for the good of a common cause would be a great stimulus to him in his work, and the fact that he would be given an opportunity to compare final results with others working on the same problem would promote accuracy. The experience gained by the undergraduate in research would be splendid training for him and would aid in fitting him for more extensive and more useful researches to be undertaken in later life. It is believed that such a procedure in research in highway engineering courses primarily would benefit the student, and at the same time might add to the general fund of knowledge leading to the advancement of the science of highway engineering.

The most extended researches might be undertaken in graduate courses under the general supervision of the same advisory body, and it is to be expected that the results obtained from graduate researches would be of much more value to the profession than those from undergraduate work.

CHAIRMAN. One of the speakers this morning said that a committee of the engineering division of the National Research Council was undertaking a project of that kind.

Mr. GOLDBECK. Yes; I understand that is the case, and it seems to me that is the logical thing to do. I feel that in the first place we must have a very definite outline of the problems. The problems should be minutely outlined, and there should be some central body to see that they are properly distributed, considering the kind of equipment the colleges have. Those problems could then be worked out in detail. You can readily realize that it is impossible to assign any one great, big problem to students for research work, because they have not time enough to devote to such work, but the main problems can be subdivided and the students can work on the minor sections of the main problems.

CHAIRMAN. Would it be an advantage if engineering institutions should have connected with them research departments, such as the experiment stations of the agricultural colleges, similar to the agency planned in some of the bills now before Congress to conduct fundamental research and then to have these minor research problems more or less articulated with them?

Mr. GOLDBECK. That may be worked out in connection with advanced courses.

CHAIRMAN. Is it your idea to have students do research work in the first, second, and third years?

Mr. GOLDBECK. No; I should say not. It should not begin before the third or fourth year. I hardly believe the students are ready for research work before the beginning of their senior year.

CHAIRMAN. Ordinarily, for instance, in the agricultural colleges, the research work started in the senior year is of a minor nature, just enough to give them the training in methods of research rather than in the solution of problems.

Mr. GOLDBECK. I feel that all these problems must necessarily be of a minor nature. I do not feel that research work as conducted in the colleges in the time allowed for such work can be anything else but of a minor nature. It is important work, but I think the minor problems, when assembled, will give the answer to the big main problems.

CHAIRMAN. Your remarks are directed more to the training of the students than to the solution of research problems in connection with highway construction. That, you think, is the most important aspect of the case?

Mr. GOLDBECK. I feel that is what the student is going to college for, and not primarily to conduct research. Any research work that is conducted should be given for the purpose of training the student.

CHAIRMAN. I wonder whether we are expected to consider also the importance of fundamental research. While perhaps not connected with the educational aspects directly, there is a field there, connected with the field of highway engineering, to which attention ought to be called. I should judge that the engineering division of the National Research Council must feel that necessity, inasmuch as it has established a committee on highway engineering research, which will, I suppose, be devoted mainly to the fundamental aspects of the subject. You are in that group. Do you know what the feeling of the committee is?

Mr. GOLDBECK. As I understand the outline of that group, the engineering division, as far as highway engineering is concerned, is divided into three main sections: (1) Road design; (2) economics; (3) highway transport.

Dr. ZOOK. Is it the idea of the Research Council that research work can be done in connection with the usual work of the fourth-year student, or is it that graduate work should be developed?

Mr. GOLDBECK. I do not believe the committees of the National Research Council are depending upon the little research work done by students. They are going to depend primarily on research work done in graduate schools, or by various State laboratories, or work done by committees of the various technical societies. They are not going to depend very much on the work of undergraduates.

CHAIRMAN. They have definitely approved the legislation to establish research experimental stations in connection with colleges and universities?

Mr. GOLDBECK. The National Research Council has taken the attitude that there are two aspects of research work: (1) The development of research personnel, which must start back in the finding of individuals adapted to research, and train them for research; (2) the solution of fundamental problems by direct effort, and the development of research agencies in view of finance, and manned by thoroughly experienced research men.

Mr. CHAPIN. There has been research work carried on in highway construction on the part of students at the University of Michigan, and divided into permanent and temporary research, and they have endeavored over a period of years to develop as much student research work as can be done, and that type of work is directly stimulated by scholarships, and has proven to be very successful to the State of Michigan.

Mr. HUBBARD. Is that work undertaken by undergraduates?

Mr. CHAPIN. Yes; by undergraduate students.

CHAIRMAN. Do you know whether the State highway departments or industries provide any scholarships?

Mr. CHAPIN. I am providing one myself.

CHAIRMAN. You are doing it as an educational proposition rather than to get some fundamental results?

Mr. CHAPIN. I gave a scholarship, or, rather, I should say a fellowship, in highway engineering at the University of Michigan; they were able to get together more or less in the way of equipment. The fellowship which I gave is based on permanent types of highway research work along that line. The Detroit Edison Co., while I have not investigated it, have over the same period of time given a fellowship based on the investigation of dirt roads, possibly because they have in Michigan investments scattered all over the State and they want information to tie up their various plants with some sort of highways. They have continued to do that, and it is an annual scholarship.

Mr. HUBBARD. I should like to raise the question as to whether research work should find a place in undergraduate work? Personally, I do not think it should, unless the usual procedure of introducing highway engineering at the present time is changed. It is introduced usually in the senior year, and in order to get it, it is necessary for the student to have more experience than he can get in one year's training, as introduced in the senior year. I do not think that it has a place in undergraduate work.

President HOWE. I wholly believe that we need a vast amount of research work done in connection with our roads. We have only to look at the condition of roads which have been used for a short time by heavy trucks to see that we do not know how to build them. We have available over $800,000,000 to spend on roads, and we ought to conduct the most far-reaching researches before we put our money into anything which we do not know will be valuable or lasting. I think that any research carried on by students is absolutely worthless. I speak after watching research for 40 years in college. It is a valuable thing, as a rule, for the student to find how to conduct researches, but it is worthless to any one else. They learn mainly the methods of research, and they will become valuable research workers later on. With the tremendous amount of money to be spent and with the tremendous amount of traffic going over the roads, I believe the highway problems of so great importance to the country that we ought to have the very highest type of professional research work done, and not depend upon students except for the smallest and minor problems. Students can assist in these. Many of these researches must last more than a year. An undergraduate is available for only one year, and he can give only limited time in that one year, and after the senior year he is not available at all. Many of the problems should continue over many years before we can come to any correct solution in regard to them. If we were conducting researches in regard to anything in connection with commercial problems, we would not take an inexperienced boy and let him conduct the research work. We would take the very best man we could find and pay him whatever was necessary. Now, it seems to me that a large amount of money ought to be available for professional research work on the roads. Use graduates and undergraduates as much as we can for small things, but consider it a small part of the problem.

Mr. GOLDBECK. I should like to second what Mr. Howe has said. The actual value of the research work turned out by the student can not be considered very highly. However, the training will be of value to him later. That is the most valuable thing.

President HOWE. Surely that is the most valuable thing. Train them so they will be valuable later on.

Dr. ZOOK. This field is more or less foreign to me, of course, but I think that most engineers are agreed that they will not endeavor to specialize too much in any one direction. That means that they are not even going to endeavor to do very much research work in the junior and senior years. If any research work is done along this line, it will be done by graduate students. Can we get any kind of a statement from the persons qualified to speak here as to the necessity of graduate research in highway engineering problems, and anything like the extent to which it ought to be prosecuted in our colleges and universities? That seems to me to be the problem.

CHAIRMAN. The discussion has centered upon two aspects of the case: One, the education of the undergraduate student. There seems to be an opinion that minor research as an educational procedure in the senior year is recommended as a part of the education of the student with the understanding that the products of that research are of no value in the matter of solving our big problems. Two, the importance of this subject is so great that fundamental research manned in the most thorough manner and financed so as to solve the big problems is necessary before we go very far in our road-building program. These two points seem to be perfectly clear from the discussion.

President HOWE. May I give an illustration? We started in Cleveland two years ago to pave our most important highway, Euclid Avenue. We used the best highway engineering and the best knowledge we had; gave it to a very competent engineer. In less than a year's time, I think in less than six months' time, in the very best section, a little over a mile in length, there were at least 50 holes in the pavement, if not more. I think that is what I mean when I say that we do not understand the methods to be used in the fundamental problems. In order to put down a good pavement we must consider the effect of water upon it, the effect of drainage upon it, the question of soil, the foundation necessary for the different kinds of traffic, the surface material which should be used, and the method of maintaining that surface. If the surface goes to pieces in a short time we should know how to replace that surface. We should have engineers who understand resurfacing.

Mr. HEWES. I wish to indorse what President Howe has said, as seconded by Mr. Goldbeck. I feel that research can not successfully be carried out by undergraduates, but in defense of the engineers in connection with what President Howe has just said I think it ought to be brought out at this conference that there is a fundamental lack of coordination between the construction of the roads and the operation of the rolling stock on the roads. Now, in the case of the railroads the same jurisdiction obtains over the construction as that which obtains over the design of the rolling stock, and the engineer knows, when he puts down a 40-pound rail, that he is not going to put over it the heaviest trains and locomotives. Now, what seems to b the fault of the highway engineer here is beyond his control in man cases. If the highway engineer can not have the guaranty of th traffic of the road that he is going to design, and can not be accorde sufficient funds to put down a road which will anticipate a 100 or 20 per cent increase in the duty of that road, we can not charge him wit the failure of that design which is imposed on him by reason of th limitation of control and lack of money. So it seems to me that right there develops a very fundamental problem for research, so it may be somewhat of an economic or legislative problem rather than a problem of design. What seems to be the articulation between the investment and the cost and weight and speed of the rolling stock? That question leads us on indefinitely. For example, as to the relative effect of road on the vehicle—we talk of the destruction of the road by the vehicle, but have not said much about the destruction of the vehicle by the road. We have 7,500,000 vehicles which are being junked at an appalling rate. That is to say, the life of a vehicle may be seven years. With that rate in railroads they would be bankrupt in no time. How much money can we afford to add to what we have been spending for roads to cut down the depreciation of rolling stock? These are problems that it seems to me demand the very highest type of training. I think it is clear that undergraduates can not be intrusted with that. We must have great sums of money in the light of highways and rolling stocks involved. So that I suggest that we take up the question as to what authority is to propose these problems, as to what authority is given to a question when it is proposed, as to what grade of man can be intrusted with the solution of that problem, and how it shall be financed.

CHAIRMAN. Are we agreed as to the statement of the two aspects of research in relation to our committee? That is, educational and fundamental research.

Mr. CHAPIN. Is not there a question there? I am interested in graduate research. If it is carried on long enough, it assumes a value that is quite worth while. That is, a graduate engineer spends only six months or a year in research work. This makes for development rather than for training. Yet if it is possible to carry on research work in a subject as important as this over a period of time, say three years, the schools and colleges will supplement what is done by the Bureau of Public Roads and the various State highway departments. It would seem to be that there is a value in graduate research work which is surely worth while.

CHAIRMAN. I think that the discussion here refers to graduate research work and not to the work in the graduate schools. That is a different proposition, and I was just about to raise the same question as to whether it would not be advisable to recommend investigation of research work by competent investigators, such as in the National Research Council, where committees in charge have developed research work in chemistry and physics by scholarships to especially qualified men, with a five-year program and $100.000. It may run anywhere from one to five years. Does the committee wish to recommend that attention be called to that opportunity? Now, physics and chemistry both relate to this road work so closely that some of those scholarships may be secured for research work in connection with our problem.

President Howe. Are resolutions desirable?

Dr. Zook. It is desirable that the educational force of this committee should assemble and attempt to make some recommendations to the general body of what is indorsed here.

Chairman. Then I think any suggestions would be welcome to the committee.

President Howe. I have prepared four resolutions which I believe state what the members said: (1) That highway research is necessary if we are to carry the traffic which must pass over the roads in the future. (2) This research should be under some central authority, such as the National Research Council. (3) That sufficient funds should be provided and placed in charge of this central authority. (4) That this central authority should use the State highway departments, professional State engineers, graduate research departments of our universities, and all other means which could be used to further the ends desired. I should like to suggest that for discussion, Mr. Chairman.

Mr. Chapin. Everyone would agree with you in that resolution. Did you include the industries? Several industries have research laboratories. It would be well to include them so as to coordinate all of them if possible.

Mr. Goldbeck. Research work should be given to students for the purpose of training. It seems to me we are getting a little bit away from our functions here. We should deal primarily with matters pertaining to education.

Chairman. I think our committee has two functions, first, educational research; and second, fundamental research. As it was stated, it is desirable to call attention to the necessity for fundamental research. I do not think that President Howe intended to leave out the educational phase, or the importance of training students along lines of research that in future they may become efficient research engineers.

President Howe. No; I should be very glad to put that in. Universities and colleges should train their students as far as possible in research so that in the future they will become efficient engineers.

Chairman. The next topic is very similar to that: The consideration of technical research in automotive industries.

Mr. Davis. The Society of American Engineers has recently formed a committee, of which I am a member, for actually looking into what we call the science of truck operation. It is an attempt to formulate certain underlying economic principles bearing on the construction of road transportation in comparison with the railways, waterways, and horse transportation, and in that way to develop certain material, collect statistics, and to make available for our use, not only in the small endeavor that we have undertaken in our plants, but also more or less to give out to these technical schools and colleges who are going into this subject of highway engineering. Now, so much for the actual acquiring of that information. The information at the present time is more or less scattered. It is in the hands of a few, but the Society of American Engineers and the manufacturers will be very willing not only to lend their time and their best efforts to collecting and tabulating this information, but when it is available and when the courses are mapped out in the colleges, men from the companies and from the society, I know, will be very glad to volunteer, certainly at the start, and possibly for more or less continuation, in order to go before these schools and before these various technical colleges and present that material. That is, they will be willing to volunteer to more or less degree to conduct some of the courses in transport engineering, due to the fact not that instructors are not able to handle it, but because the information is so vague and scattered that it is not available for the college instructor to secure himself. The Society of American Engineers is going to take the material which is collected and boil it down, and then print in some form or another and make it available for anyone who may want it.

Dr. Jarvis. It will serve as a nucleus.

Mr. Davis. The highway end is much better off than the transport end. With the exception of the foundation to support highway trucks, the other phases are very well understood, but the transport end of it is particularly shy of this information. Now, if there are any other suggestions here or any other scheme whereby the Society of American Engineers can get at that information so as to cover the ground, we would like very much to get that at this time.

Chairman. Has anyone a suggestion to make?

Mr. Johnson. What does the word "research" mean?

Mr. Davis. I really don't quite understand what the meaning is of that statement. Do you mean technical research in the design of the building of the vehicle or in the building of the road? I hardly understand what is meant by technical research in the automotive industries.

Mr. Chapin. Might I suggest that the most profitable research that can be carried on is what I outlined this morning; that is, how traffic over the highways can be made to go at the least possible cost per mile, be it per ton-mile or per passenger (traffic) mile. It is the research in the economics of the situation.

Mr. Davis. That is one of the phases that the Society of American Engineers committee will consider. That is, as I see it, only one phase of what the word "research" covers in regard to the automotive industries. Research in an industry covers materials, fuels, etc. Your question is very good and a very important side of it, which we know very little about at the present time.

CHAIRMAN. I do not think that we should exclude questions in regard to design and those which are of more importance fundamentally, because the colleges and the Research Council want to know whether you have research problems there that you want institutions to attack; and if so, what they are.

Mr. DAVIS. We have lots of problems that we are attacking ourselves in a research way, but it is almost impossible to outline what those requirements are in a broad sense.

CHAIRMAN. You think that the competent research men in those fields would perhaps know the problems?

Mr. DAVIS. I think they are very well qualified to conduct that research.

CHAIRMAN. Does anyone have any suggestions along that line?

Dr. ZOOK. I wonder if it would not be a good idea to see in what field of research we need study at the present time.

Mr. DAVIS. Mr. Chapin has named the one phase which has had the least consideration.

Mr. CHAPIN. I am looking at this problem from the standpoint of transportation. As to the problems of design of car, fuel, etc., they have received a great deal of consideration, and much money and brain work are being devoted daily, but little so far has been developed as to the cost of that transportation over the highways, and in my own mind I am trying to compare the problem with the railway problem, which is the maintenance of the way and maintenance of the stock over that way. But we have discussed the research problem in so far as it concerns highway building, but there has been very little time and energy put in the question as to cost of transportation over the roads, and it is such a general subject, and bears intimately in its economic phase on everybody in the country. It pertains to the cost of living, and it is a subject for general research on the part of the people outside the automotive industry, although the automotive industry would be glad to get research of other questions as to fuel, etc. Here is a problem that is entirely new.

CHAIRMAN. I presume you know that in the matter of this fundamental research, not in economic lines, but in fundamental research lines, the National Research Council is always glad to learn of any problems and give any assistance it can in those fields. If there is no further discussion of this phase of the subject, we have for discussion the question of business education, to be opened by Dr. Zook.

Dr. ZOOK. I think this subject in its very nature is much more general than either one of the two that we have so far considered.

It is a problem which can be solved, not only in colleges and universities, but to a certain extent in other schools. It is also a problem which can be solved in various places in the colleges and universities.

A good deal more can be done than is being done at the present time to teach pupils in the elementary schools something of the elementary forms of business, not only for the benefit of industry but also for the benefit of the individuals concerned. In the secondary schools also there is a great deal of room for expansion, and we find in large cities there is an attempt to perform that function through the business courses in high schools. Undoubtedly in the elementary grades and in the high schools, as well as in the colleges and universities, there is an appreciation that these problems need solution.

Now, when we come to the colleges and universities, in which we are all more concerned, there are to my mind three different places where an attempt may be made to give a business education. The problem may properly be considered in connection with the engineering schools; it may properly be considered in the courses in commerce and finance that are now increasing in number in colleges and universities; and it may be considered also in connection with the usual courses in arts and sciences. I would like to say just a few words in connection with each of these three classifications.

1. The engineers present will remember that it has not been very long since an engineering student was trained as a technical student primarily. In recent years a great many engineering schools have been incorporating in their courses a certain amount of economics. The tendency a few years ago was to include one course in general economics. That one course in general economics is even now more usual than anything else. I can testify through several years of personal experience that that one course taught to engineers has been somewhat of a disappointment. It has been a disappointment because the technical students do not feel that they get out of it what they ought to have. It has been a disappointment also, because the character of the instruction given was not of the grade that it ought to be. I am very fond of saying that there is no person who ought to be more highly trained than the person who deals with the social sciences. He ought to be the ablest man in a college faculty, almost without exception. Immature young men when teaching courses in general economics in engineering schools have not always been successful, and our technical students are unprepared to meet the problems of citizenship that they are required to meet as soon as they graduate.

We have had recently a movement in engineering schools to supplement the course in general economics with courses in business economics, and it is now becoming somewhat usual for engineering schools to devote from 6 to 12 hours of their work to courses in general economics and business economics. These are courses that have to do with business management, corporation law, finance, business law, transportation problems, and with a number of other problems. I believe that the student who has taken courses of this character is going to be an extremely useful man in the automobile industry or any other large industry. I think there is nothing that engineering faculties are more agreed upon than that students need more or less of this training. If engineers can receive training of that sort they will take the places for managers and directors in corporations that are needing men of that character at the present time.

2. College and university courses devoted chiefly to business and finance. I do not know of any field in which the number of students is increasing at a faster rate than in business courses. Institutions that are not even well located for this type of work have only to advertise that they intend to give work of that character in order to obtain a large registration. In that respect, therefore, I think one may say that the supply of students that will be turned out by colleges or universities will be increased very materially indeed. I don't know whether this is much comfort to industrial people, but it ought to be if the training is of the value it should be.

3. There remains, therefore, only the third character of students, namely, the liberal arts students. At the present time there are on the average about 14,000 graduates per year from these courses. The time was that a large proportion of these students went into teaching. To the very great detriment of the teaching profession at the present time they are not going into that field, and we were forced to estimate at the Bureau of Education a short time ago that instead of one-half to two-thirds going into teaching, perhaps not more than one-third are now going into that field, and most of these are young women. It appears to me that an increased proportion of graduates from the arts and sciences courses are going into the business world. A larger opportunity ought, therefore, to be given students in arts and sciences to pursue a certain amount of work which will fit them for taking positions in industrial corporations, and I may say everywhere I find an increased tendency in that direction. If you had any experience in attempting to get teachers in colleges and universities you will bear me out when I say that there is no field in which it is more difficult to obtain competent teachers than it is in connection with these courses in business and business economics. That shows what the tendency is.

There are these three fields in colleges and universities for courses in business economics, therefore, and to my mind there is in each one of them an increasing tendency to prepare students who are fitted to take over positions of managers of corporations, after training in the corporation itself for some time. The prospect in all these fields is encouraging. I believe that most heads of corporations will agree that it is unnecessary for all men in managerial position to be technically trained.

One other thought I should like to leave: There is naturally a tendency on the part of everybody to feel that those courses in business economics which I have just mentioned should be as practical as possible. I think that it is highly to the interest of the industries to realize that not only do they need men who are trained in business economics, but that along with this work there should be a generous training in the social sciences, which are not supposed to be so practical. I am thinking of courses in political science, where men learn something of city government, State government, and of the politics of our country, together with a certain amount of modern history. I say this because I do not understand how anybody can be a leader in a corporation or in any other circle of society who is nothing but a technical man. Not only for the benefit that comes to the student as a citizen, therefore, but as a practical avenue to business success it is highly desirable to mix with the business economics courses a generous portion of these other courses.

I do not know whether I have outlined satisfactorily the three fields for courses in business education in colleges and universities, but I think that in this direction there is greater hope that the demands of industry will be met by the colleges and universities than in almost any other field.

CHAIRMAN. Are there any comments on this?

President HOWE. I am much interested in what Dr. Zook has said, because it is our experience, and presumably it is the experience of other institutions, that a very large proportion of our graduates who have been out for 15 or 20 years, and who are now presidents, vice presidents, or managers of large organizations, come to me and tell me how they have felt when they first had to deal with business problems. Some of them were scared to death when they had to sit across from a girl stenographer. I have tried to help these men a little by having some courses of lectures given to seniors. I tell them that I hope after graduation they will take special courses at Alexander Hamilton Institute, but I find that after seniors have had this very brief course of lectures they come to me and say, "Can we get into the business section instead of the technical side?" We encourage a few of them to do it, because we think they ought to do especially well in executive positions. Dr. Zook's statement meets very well with my own experience.

Mr. HEWES. I should also like to support what Dr. Zook has said of the failure of engineering training to sufficiently equip the man along the lines he has indicated. For example, the question arises, how can we coordinate the expenditure of the public funds with the amount which can be used in the construction of roads. This depends upon the knowledge of how much roads can be made to earn. The student should be given sufficient instruction and vision along the lines of taxation and finance, interest and bond issues, so that when he goes to make a report on a system of roads he may not merely report on materials, on their location, and also on the period of time that it will be necessary to construct this system, but he may be able to justify his report by the necessary sustaining data. I do not think technical graduates are equipped along these lines, and I want to express myself in support of what Dr. Zook has said. The course is now crowded, and physicists and geologists are both claiming more time. But we must bear in mind that we must make room for all who should come in in four years.

Mr. HEMINWAY. I am quite in sympathy with the comments which have been made by Dr. Zook. I feel that there should be a closer contact established between our industrial leaders and our educators. From my observation of men, if they come from colleges equipped theoretically to assume managerial positions, they have very markedly lacked the practical element. They have been unable to apply their theories for quite a considerable period of time, and, as has been expressed, they have found themselves lost in the first element of dictation. Coincident with the studies in the colleges and in the secondary schools there should be an opportunity offered, possibly during the summer months, for practical application of those studies and those theories in business, and if a canvass were made of our large industrial leaders I think that an interest might be aroused whereby students might have courses in factories and offices. The industrial management is a little disinclined generally to accept that thought for the reason that it is expensive; it increases essentially the general routine work. In general, however, I think a great many of them are sufficiently broadminded to accept it.

Mr. COBLEIGH. I was a little bit alarmed when I thought you told Mr. Davis we were not concerned with the vocational element. I am so full of that subject that I can hardly talk on anything else. I think that there is a great deal to be said of the maintenance end of the automotive industry. We are going to need more and more technically trained men to take executive positions in repair work, as well as design and production. We have thus far followed the program of promoting the better mechanics to the executive positions. But I believe that the time is coming when the maintenance work will be carried out on such a scientific plan that it will need technically trained men to do it. It will become worth the while of a full-sized engineer to plan out ways and methods, systems and organizations, and all those other things which are so much involved in production, in repair methods. If these methods were followed in the factory we would make automobiles cost four times as much as they do. By applying the same theory in the repair of cars we could repair them for about one-fourth of what we do now. Now, that may be an unattainable ideal, but I believe that when business sense and engineering genius are applied to the maintenance problem we will be able to conduct this work in a very efficient way.

Mr. LOGAN. I think that if we had here a number of the executives of the industry with which I am connected they would want to give Dr. Zook a vote of thanks. As an evidence of how much it means to take an engineer along the lines of business, I think everyone will agree, when a young man or even an old man comes into an engineering organization, if he is in a position to understand his work not only from the engineering end but from the business end, there is a cooperation that works to the advantage of the company which he represents. But if he only works from an engineering point of view, the man in the office with only the business view does not get along with him. The result is, if we will put more in the course relative to the business, when he does come into an organization he will see that there are other problems from the commercial point of view. I have in mind a technical man in our office to-day whom I believe would rather be in the commercial end, because he is always cooperating. He is always doing everything he can, not only from the engineering standpoint, but from the other end of the business. I recall about five years ago, when I was with another organization, a man who had not the sense of cooperation, but was strictly a technical man, was called into a conference. He could "gum up" more business for me than I could ' rake up " in a year's time, because he saw it only from the engineering point of view. On the other hand, the other man is right there on the spot to cooperate, and will see our line of thought. The engineer who has not had business training has only one thought, and that is engineering.

Mr. DAVIS. I would like to bring out possibly another point in connection with that. I have had charge of a number of draftsmen in the engineering work, and many times young engineers right out of college will come to me and ask if I would advise them to go into the commercial end, or in the administration end, or into the strictly engineering line of work not connected with the automotive industries. I have answered them in this way: First, I ask them what they studied in addition to technical work. If they have taken courses in economics and business administration, that is fortunate. Beyond that I ask them if they absolutely can not help but go into engineering. If they are not ordained to be engineers, they had better go into the business end, into the sales, commercial, or one of the other ends. The demand for the highly trained technical engineer who succeeds is not great in the automotive industry. The demand for men with an engineering training who know the other phases is very great indeed, and I can not put too much emphasis on the fact that the engineers should have an insight into the economic side, because when they come out of the engineering school only a very small percentage are fitted to continue in the engineering work, strictly speaking. The others will be forced out of the engineering, and if they can have a little training before they start to work which will give them certain principles of business training, they are 100 per cent better off than the man who has gained it by actual experience.

Dr. Jarvis. I have nothing to contribute to this discussion except to note that we have overlooked one important phase. President Howe says that our four-year course is too overloaded, and has too much in it. That has suggested to me that we need a little closer articulation between the secondary and higher institutions. Is it not possible to crowd back into the high school some of the work we are now offering in the colleges? Many boys in high school know they are going into engineering. That is the case to-day more than previously. Some men have looked to an industrial career, and why should we not have a greater flexibility in our secondary school course, and provide for general industrial curricula in the high schools? It seems to me that that would give us more time in higher institutions to give instruction in business economics and managerial instruction. President Brush, of the Emergency Fleet Corporation of Philadelphia, said that hardly a graduate of a technical school knew what a balance sheet looked like, or knew the difference between a lease and an invoice. We can give more in our secondary school courses, also along the lines of business training, to make up for the deficiencies that we realize now in our engineering graduates. If they had some instruction in business forms and business methods there would not be the need for them in the college course. At the same time our college course must make sure that the graduates have that training along economic business lines before they go out. We should carefully articulate the secondary courses with those of the colleges and universities.

MEMORANDUM REGARDING RESEARCH WORK TO BE UNDERTAKEN IN HIGHWAY ENGINEERING.

By Mr. A. T. Goldbeck, Engineer of Tests, Bureau of Public Roads.

There are many problems to be undertaken in connection with the design and construction of highways. The advent of the heavy motor truck has brought with it problems in construction and design which hitherto have needed but very little consideration. The roads which we have built in the past were built with the idea of carrying comparatively light, fast-moving motor traffic, and they were generally quite satisfactory for this purpose, but they have become entirely inadequate for the extremely heavy loads imposed on them by the more recent heavy motor-truck traffic.

There are numerous problems which have to do with the alignment and grades of roads, curve elimination, banking of roads on curves, maximum grades, character of materials for wearing surface, but by far the most important problem is that of the determination of proper designs to carry successfully heavy traffic.

The design of the present day road surfacing is an exceedingly complex problem. In the first place, the loads acting on the road surface are not merely static loads but they are applied with considerable impact. The road surfacing does not rest on a uniform support, but this support is extremely nonuniform in character, varies from day to day, and even varies according to the character and position of the load on the road surface. The analysis of stresses in road slabs is, therefore, a very complex problem in applied mechanics. At the present time this problem is being attacked by the Bureau of Public Roads in the following general way.

In the first place, since the loads are applied with impact due to the unevenness of the surface and speed of the moving vehicles, an attempt is being made to determine accurately the amount of this impact. Different sizes of trucks are being used, and pneumatic as well as solid tires are being investigated. As in the design of any structure, after knowing the amount of load imposed on the structure, the next step is to determine the effect of that load, and for this purpose another series of tests is being carried out in which a large impact machine designed to resemble the conditions on the rear wheel of a heavy truck is being used. This machine exerts impact on road slabs of different construction laid directly on the subgrade, and the effect of continuous impact on these slabs is carefully noted. Still a third investigation is being carried out in which a specially designed machine is rolled over the sections of pavement in order to produce accelerated wear on these sections, and careful photographic records of the behavior of these sections under accelerated traffic are kept.

As the subgrade is part of the road structure, a comprehensive series of investigations has likewise been started to study the characteristics of the soils which make good or poor supports for road surfaces. In addition, studies are being made of methods of drainage in an attempt to develop effective systems as applied to different conditions of soil and topography.

These are some of the big main problems in structural design of roads, and these major problems are capable of subdivision into a large number of minor problems, some of which appear in the following list:

THE SUBGRADE.

(a) *Properties of the Material Composing the Subgrade.*

1. The bearing power of soils subjected to various compressions and containing various amounts of moisture.
2. Study of capillarity, both vertical and horizontal.
3. Effect of mechanical analysis and chemical properties on capillarity.
4. Interrelation of type of soil, percentage of moisture and volume.
5. Effect of freezing and thawing on volume and supporting properties of soil.
6. Study of the distribution of pressures through soils due to concentrated loads.
7. Study of methods for improving bearing power of soils.
8. Methods of compaction and amount of compaction to be given to subgrades to render their volume constant.
9. A study of the friction between subgrades and road surfaces.

(b) *Drainage of the Subgrade.*

1. Study of the drainage methods to be applied to soils of different types.
2. Study of methods of rendering soils impervious.
3. Study of drainage to take care of freezing conditions.
4. Study of conditions affecting run-off.
5. Study of gutter design under different conditions of grades and soils.
6. Study of inlets.
7. Study of embankment wash as affected by roadside planting.
8. Study of percentage of moisture in various subgrades at various depths.
9. Study of various methods of drainage to be employed with various types of subgrade.
10. Study of heaving of road slabs due to frost.
11. General study of the relations existing between the physical properties of the soil composing the subgrade and behavior of the road slab might include a comparative study of subgrades which show typically good and poor bearing power in various seasons of the year and under both good and poor drainage conditions.

THE WEARING SURFACE.

In the wearing surface there will be included the road foundation as well as the actual surface material subjected to the action of traffic. A study of the wearing surface involves an investigation of the forces which act upon the surface tending to destroy it, a study of the properties of materials employed in the construction of the surface, their proper combination, and the design of the pavement as to thickness and shape of cross section. Each type of wearing surface possesses defects which render necessary investigations to improve these particular shortcomings.

AMOUNT OF IMPACT ON ROAD SURFACES.

The measurement of impact on roads, using trucks of different weights, tire equipment, and wheel equipment, should be made.

EFFECT OF IMPACT ON ROAD SURFACES.

The effect of the impact of trucks on various combinations of road surfaces should also be investigated. The following surfaces are suggested for investigation:

Plain concrete.

2, 4, 6, 8, or 10 inches by 7 feet square; also 6 inches thick by 14 feet square	Poor subgrade.
Do	Well-drained subgrade.

Monolithic construction—Wire-cut lug brick.

1-inch screenings	Good subgrade.
1, 2, 4, or 6 inch concrete	Poor subgrade.
Do	Well-drained subgrade.

Monolithic construction—Vertical-fiber brick.

4 or 6 inch concrete base	Good subgrade.

Monolithic construction—Repressed brick.

4 or 6 inch concrete base	Good subgrade.

Semimonolithic construction—Wire-cut lug brick.

4 or 6 inch concrete base	Poor subgrade.
Do	Well-drained subgrade.

Sand-cushion construction—Wire-cut lug brick.

4 or 6 inch concrete base	Poor subgrade.
Do	Well-drained subgrade.
4 or 6 inch concrete base, using 1-inch screenings	Well-drained subgrade.

Wire-cut lug brick—Grout filler.

6 or 12 inch macadam foundation	Poor subgrade.
Do	Well-drained subgrade.

Vertical-fiber brick—Bituminous filler.

4 or 6 inch concrete base, sand-cement cushion	Poor subgrade.
6-inch concrete base, sand-cement cushion	Well-drained subgrade.

Vertical-fiber brick—Bituminous filler.

4 or 6 inch concrete base, sand cushion	Poor subgrade.
6-inch concrete base, sand cushion	Well-drained subgrade.
4 or 6 inch concrete base, screenings	Well-drained subgrade.

Wire-cut lug—Bituminous mastic cushion and filler.

4 or 6 inches	Poor subgrade.
6 inches	Well-drained subgrade.

Monolithic construction—Three-inch wire-cut lug brick.

3 or 4 inch concrete base	Poor subgrade.
Do	Well-drained subgrade.

4 or 6 inch bituminous base, 4 inches brick.
Mastic cushion and mastic filler.
Cold mix base.
Rich concrete base for brick slabs.
Concrete slabs having poor aggregate.
Concrete slabs 6 inches and 8 inches thick, plain and reinforced.
Bituminous surfaces on concrete and other bases.
Reinforced concrete slabs of different thickness.

The above tests have to do with the load-resisting qualities of the pavements. Special types of pavement should be investigated through special investigations, as follows:

CONCRETE PAVEMENTS.

1. A study of the economical proportions for various aggregates to render the pavement resistant to abrasion. (For instance, the economy of 1:2:3½ *vs.* 1:2:4 mixture.)
2. A study of the wear-resisting qualities of concrete, using special aggregates such as soft limestone, soft sandstone, blast furnace slag, etc., as compared with standard aggregates such as gravel, trap rock, etc.
3. A study of admixtures such as hydrated time and diatomaceous earth.
4. A study of central-plant-mixed concrete versus concrete mixed at the work.
5. The effect of consistency.
6. A study of the size of aggregates on the physical properties such as resistance to abrasion and crushing strength.
7. Vibrolithic concrete.
8. Machine finished versus hand finished concrete roads.
9. A study of the cracking of concrete surfaces.
10. The prevention of the creeping of surface on grades.
11. Prevention of heaving and slab over-riding.

REINFORCED CONCRETE PAVEMENTS.

1. Per cent of steel required to prevent serious cracking under different subgrade conditions,
    (*a*) Under impact,
    (*b*) Due to other causes such as freezing, temperature change, and moisture change.
2. Proper location of steel.
3. Circumferential steel.
4. The use of hard or soft steel, rerolled rail, or billet steel.
5. Plain or deformed bars, the use of bars or sheet steel.
6. An investigation of the use of steel tracks.

BRICK PAVEMENTS.

1. What thickness is comparable with concrete and other types on various subgrades.
2. How do various types of brick construction compare in strength?
3. What rattler loss should be set for different traffic conditions?
4. Should individual brick losses be kept within a narrow limit? What is the average per cent of loss and adequate specification?
5. Study of abrasion resistance of brick having different rattler losses.
6. Study of the relative merits of Portland cement grout and bituminous fillers.
7. Study of relative merits of rattler and toughness test for paving brick.
8. Study of the merits of "lugless" brick.

BITUMINOUS CONCRETE PAVEMENTS.

1. The resistance to impact of bituminous pavements as compared with concrete and brick on basis of different kinds and thicknesses.
2. A study of the proper gradings of mineral aggregate for bituminous concretes to obtain maximum density and rigidity to eliminate waving and humping.
3. An investigation of the test requirements for different types of bituminous materials for use in various types of bituminous construction under different climatic conditions.
4. A study of the formation of waves in asphalt surfaces.
5. A study of the relative merits of concrete, bituminous concrete, or broken-stone bases for bituminous concrete or bituminous macadam pavements.
6. A study of bituminous earth mixtures, with the idea of developing an efficient surfacing for parts of the country where aggregates are not available.
7. The development of an efficient method for protecting concrete wearing surfaces with bituminous mats.
8. A study of special aggregates for bituminous concrete, such as gravel and blast furnace slag.

BITUMINOUS MACADAM.

1. Study of the characteristics of bituminous materials to be used with different types of aggregates in various parts of the country.
2. A study of the most efficient size and grading of aggregates for use in bituminous macadam.
3. A study of concrete versus broken-stone foundation for bituminous macadam.
4. A study of methods of repair for wavy bituminous macadam surfaces.

LABORATORY STUDIES.

NONBITUMINOUS MATERIALS.

1. Develop a suitable abrasion test for aggregates for use in concrete pavements.
2. Standardize the crushing strength test for rock, brick, etc.
3. Standardize an abrasion test for gravel for use in gravel and in gravel concrete roads.
4. Develop a test for stone paving block.

5. Investigate proper methods for sampling paving materials.
6. Standardize tests for silt in sand and gravel.
7. Develop methods for laboratory investigations of sand-clay for sand-clay roads.
8. Investigate blast furnace slag with the idea of formulating safe specifications for various types of construction.
9. Develop a satisfactory method for testing sands for different proportions of concrete, mortar and grout other than the strength ratio method.
10. Standardize the commercial sizes of broken stone, broken slag, and gravel.

BITUMINOUS MATERIALS.

1. Density of bituminous mixtures involving the temperature at which maximum compression is obtained.
2. Determination of water in bituminous road materials.
3. Determination of flash point of bituminous materials.
4. Comparative volatilization tests on asphalts and road oils in the New York Testing Laboratory gas oven and in the Freas electric oven, using 20 and 50 gram samples.
5. Adhesion of bituminous fillers to brick and stone block.
6. Toughness of bituminous aggregates.
7. Investigation of the chemical composition of bituminous materials for the percentages of ashphaltous acids and their anhydrides, asphaltenes, petroleum resins, and unaltered petroleums before and after being subjected to exposure tests, with the idea of determining the change in the chemical composition that takes place.

PROBLEMS IN ECONOMICS OF ROAD CONSTRUCTION.

1. What effect have grades on cost of haul?
2. What effect have different surfaces on cost of haul?
3. What effect have curves on cost of haul?
4. What effect have different surfaces on the wear of tires?
5. How should motor vehicles be taxed?
6. Under what conditions should a road be improved to take care of increased weight of traffic.
7. Study and development of economical schemes for handling materials at the quarry, crushing and screening plants.
8. Study of the tractive resistance offered by various road surfaces.

The above problems are listed merely as suggestions of the amount of research work which should be undertaken. Undoubtedly there are numerous other problems which, in turn, are capable of being subdivided into minor researches, some of which could be carried out by engineering students under proper supervision.

The highway problem has developed into a complex problem of design and has become one of great importance, due to the vast expenditures of public funds for highway construction. Highway research should, therefore, be organized on a national basis, and every research laboratory in the country should be included in a national problem of highway research.

CURRICULA SUGGESTIONS IN BUSINESS EDUCATION.

I. *High schools.*—Bookkeeping; commercial law; elementary banking; and elementary practical economics.

II. *Colleges and universities.*—In this connection attention is called to the recommendations of the Conference Committee on Commercial Engineering, which met at Washington, D. C., March 31 and April 1, 1919:

1. That from 12 to 18 semester hours be required in all engineering courses in the following subjects: General economics; cost accounting; business reorganization; and business law.

2. That a curriculum providing for a minimum of 15 to 30 units in business economics be incorporated in all engineering courses and offered on an elective basis. It is recommended that electives be encouraged in connection with all engineering courses in the following subjects: Labor and employment problems; statistics; corporation management and finance; political science; marketing, including advertising and salesmanship; psychology; scientific management; and transportation. It is further recommended that economic phases of engineering subjects be emphasized wherever possible in engineering instruction.

In addition to the subjects suggested by the above conference committee, students should be permitted and encouraged to elect a course in highway transportation economics if possible.

Students in arts and sciences should also be permitted and encouraged to choose from 12 to 18 hours of work from among the foregoing subjects.

REPORT OF THE COMMITTEE ON RESOLUTIONS.

Chairman: Roy D. Chapin, president, Hudson Motor Car Co., and vice president of the National Automobile Chamber of Commerce.

Secretary: Pyke Johnson, secretary of highways committee, National Automobile Chamber of Commerce.

Whereas American science and industry have forged a new unit of highway transportation which is destined to bring about a far-reaching change in life and thought not only in this country but in the world; and

Whereas the problems of highway engineering and of highway transportation engineering are so closely interrelated as to demand not only the highest type of trained men to guide them but an appreciation of the entire problem of highway transportation by both highway and transportation engineers; and

Whereas the American people have seen fit to meet the needs of highway transportation with appropriations for hundreds of millions of dollars for better highways, which can only be expended efficiently and intelligently as we comprehend to the fullest extent the economic relationship existing between the roadbed and the motive unit; and

Whereas these problems, calling as they do for men of the highest collegiate and vocational preparation, can be solved only as our educational institutions are able to meet this need with increased facilities for research, study, and practical application: Now therefore be it

Resolved, That we, the representatives of education, industry, and Government, assembled in national conference at Washington, D. C., at the call of the Commissioner of Education, to discuss this subject and to formulate recommendations concerning it, do hereby concur in the following statements:

That there is no one domestic activity of more vital import to the people of the United States than an efficient and economical administration of our highway program;

That there is a pressing demand for trained men, not alone to guide this program, but also to undertake the problems of production and the economic use of vehicles over the highway;

That this need can only be met by increased educational facilities for turning out these men;

That the entire subject is one which should be closely coordinated and a permanent committee made up as hereinafter designated should be appointed by the Commissioner of Education to consider this problem in its several aspects and to bring about a fuller understanding of it on the part of the people of the country.

That the component parts of this committee should represent the Bureau of Education, the Bureau of Public Roads, the War Department, the State highway departments, the automotive industries, the tire and rubber industries, higher educational institutions as the groups best equipped to furnish the technical information needed and to work out these great public questions.

Roy D. Chapin,
H. S. Firestone,
Paul D. Sargent,
Thos. H. MacDonald,
Charles S. Howe.
Resolutions Committee.

THE PERMANENT COMMITTEE.

In harmony with the foregoing resolutions the following committee on highway and highway transport education was named:

P. P. Claxton, Commissioner of Education, chairman.
Thos. H. MacDonald, Chief of the Bureau of Public Roads
Paul D. Sargent, chief highway engineer of Maine, and president American Association of State Highway Officials.
Col. Mason M. Patrick, Corps of Engineers, United States Army, War Department.
Roy D. Chapin, vice president National Automobile Chamber of Commerce.
H. S. Firestone, president Firestone Tire & Rubber Co., representing the Rubber Association of America.
F. L. Bishop, dean of the School of Engineering, University of Pittsburgh, and secretary of the Society for the Promotion of Engineering Education.

At a recent meeting of the permanent committee on highway and highway transport education, Prof. C. J. Tilden, S. B., M. A., professor of engineering mechanics at Yale University, was elected to direct the educational program of the committee, the trustees of Yale University having consented to release Prof. Tilden until September 1921.

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32. Monthly record of educational publications, October, 1920.

33. Educational directory, 1920–21.

34. Statistics of universities, colleges, and professional schools for 1917–18. Advance sheets from the Biennial Survey of Education in the United States, 1916–1918. H. R. Bonner.

35. Agriculture in secondary schools. A report of the Commission on the Reorganization of Secondary Education, appointed by the National Education Association.

36. Preliminary survey of the schools of the District of Columbia.

37. State higher educational institutions of South Dakota.

38. Monthly record of educational publications, November, 1920.

39. Facilities for foreign students in American colleges and universities. Samuel P. Capers.

40. The curriculum of the college of agriculture. Carl R. Woodward.

41. The Francis Scott Key School, Locust Point, Baltimore, Md. Chas. A. Bennett.

42. Education for highway engineering and highway transport. F. L. Bishop and Walton C. John.

43. Survey of the schools of Winchester, Mass.

44. Salaries of principals of high schools.

45. Monthly record of educational publications, December, 1920.

46. Organization of State departments of education. L. A. Kalbach and A. O. Neal.

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BULLETIN, 1920, No. 43

SURVEY OF THE SCHOOLS OF WINCHESTER MASSACHUSETTS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

BULLETIN OF THE BUREAU OF EDUCATION FOR 1920.

No. 1. The problem of mathematics in secondary education. A report of the Commission on the Reorganization of Secondary Education, appointed by the National Education Association.

2. Monthly record of educational publications, January, 1920.

3. Private high schools and academies, 1917–18. Advance sheets from the Biennial Survey of Education in the United States, 1916–1918. H. R. Bonner.

4. The problem of adult education in Passaic, N. J. Mrs. A. B. Fernandez.

5. Monthly record of educational publications, February, 1920.

6. Monthly record of educational publications, March, 1920.

7. Requirements for the bachelor's degree. Walton C. John.

8. Agricultural and mechanical colleges. Walton C. John.

9. The feasibility of consolidating the schools of Mount Joy Township, Adams County, Pa. Katherine M. Cook and W. S. Deffenbaugh.

10. Correspondence study in universities and colleges. Arthur J. Klein.

11. Statistics of State school systems, 1917–18. Advance sheets from the Biennial Survey of Education in the United States, 1916–1918. H. R. Bonner.

12. Training teachers for Americanization. John J. Mahoney.

13. Educational work of the Commercial Museum of Philadelphia. Charles R. Toothaker.

14. Monthly record of educational publications, April, 1920.

15. Monthly record of educational publications, May, 1920.

16. A survey of education in Hawaii.

17. Monthly record of educational publications, June, 1920.

18. Lessons in civics for the six elementary grades of city sch M. Harris.

19. Statistics of public high schools, 1917–18. Advance sheets Biennial Survey of Education in the United States, 1916–1918. Bonner.

20. Salaries in universities and colleges in 1920. L. A. Kalbach.

21. Schools in the bituminous coal regions of the Appalachian Mountains. W. S. Deffenbaugh.

22. A school building program for Meriden, Conn.

23. A school building program for Gloucester, Mass.

24. Statistics of city school systems, 1917–18. Advance sheets from the Biennial Survey of Education in the United States, 1916–1918. H. R. Bonner.

25. Monthly record of educational publications, September, 1920.

26. Reorganization of science in secondary schools. A report of the Commission on the Reorganization of Secondary Education, appointed by the National Education Association.

27. Survey of the schools of Brunswick and of Glynn County, Ga.

28. Monthly record of educational publications—Index, February, 1919—January, 1920.

29. The national crisis in education—An appeal to the people.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 43

SURVEY OF THE SCHOOLS OF WINCHESTER MASSACHUSETTS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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LETTER OF TRANSMITTAL.

Department of the Interior,
Bureau of Education,
Washington, September 22, 1920.

Sir: At the request of the school committee of that town, this bureau made last spring a comprehensive survey of the schools of Winchester, Mass., a residential suburban town near the city of Boston. The report of the findings of the committee making the survey, together with constructive criticisms and recommendations for the improvement of the schools, is contained in the manuscript which I am transmitting herewith for publication as a bulletin of the Bureau of Education. This report will be helpful not only to school officers, teachers, and citizens of Winchester, but also to school officers, teachers, and citizens in similar towns in all parts of the country, and to students of education generally.

Respectfully submitted.

P. P. Claxton,
Commissioner.

The Secretary of the Interior.

INTRODUCTION.

At the Winchester (Mass.) town meeting of March 3, 1919, it was—

> *Voted,* That the moderator appoint a committee of 15, to consist of both men and women living in the town, to consider the advisability of having an educational survey of the public-school system of the town made, with a view to improving the same, or of taking any other action with respect to the public schools, said committee to report as early as possible to the selectmen, who may thereupon call a special town meeting to act upon the report, either prior to June 1 or after October 1, 1919.

In accordance with this action a committee comprising representative men and women citizens of the town was appointed. This committee made an investigation of school conditions along the following lines:

1. Collecting the criticisms of the schools made by the parents and considering their merit.
2. A consideration of ways of improving the schools.
3. A consideration of the advisability of having a survey of the schools made by technical experts.

A thorough investigation was conducted by the committee along the lines agreed upon and a well-considered and valuable report submitted. Respecting the desirability of having a survey made by technical experts the committee's conclusion was as follows:

> From the beginning we have had an open mind regarding the desirability of having an educational survey. We have read numerous reports of such surveys which have been made for other municipalities, partly with a view of acquainting ourselves with what has been done along this line, partly with the hope that we might draw from the experience of others that knowledge which could lead us to make specific recommendations regarding technical improvements in our schools. This hope, however, was speedily dispelled. We are convinced that no body of laymen should be charged with such a task.
>
> The Federal Bureau of Education, under conditions easily complied with, will undertake a survey of the Winchester schools. The total expense to the town of such a survey, as fixed by the United States Commissioner of Education, will not exceed $2,000. The publication of the report of the survey—necessarily an expensive matter—will be at the cost of the Federal bureau.
>
> In view of all the evidence considered by us, we are of the opinion that such a survey should be undertaken. We deem it to be of particular importance at this time on account of the somewhat unsettled conditions in our schools. We recommend, therefore, that it be undertaken as soon as the necessary arrangements can be made by the Bureau of Education of the Department of the Interior.

> Our recommendation that the survey be made should not be interpreted as reflecting on the superintendent. To understand thoroughly the details of the entire school system, to institute and carry out changes in the established order looking toward improvement, is a task not easily or speedily to be accomplished by one individual. We understand he will welcome the proposed survey. We believe it will afford him much assistance.

The recommendations of the committee of 15 were approved at the town meeting of March, 1920, and the Winchester school committee was authorized to take the necessary steps. Arrangements were at once made with the United States Commissioner of Education for a survey to be made by the Bureau of Education under his direction.

To assist the Commissioner of Education in making this study he appointed the following commission:

Frank F. Bunker, Chief City School Division, Bureau of Education, director of the survey.
Julia W. Abbot, Specialist in Kindergarten Education, Bureau of Education.
Thomas W. Balliet, ex-Dean Department of Education, New York University.
W. S. Deffenbaugh, Specialist in City School Administration, Bureau of Education.
Alice B. Fernandez, Specialist in Social and Industrial Problems, Bureau of Education.
Florence C. Fox, Specialist in Primary Education, Bureau of Education.
George R. Twiss, Specialist in Secondary Education, Bureau of Education.

In addition the Commissioner of Education arranged with the division of education of Harvard University to give certain standard educational measurement tests in the elementary grades and to tabulate the results. This work was done under the personal supervision of Mr. Edward A. Lincoln.

A summary of the conclusions and recommendations by the commission will be found at the end of each chapter or important subdivision.

SURVEY OF THE SCHOOLS OF WINCHESTER, MASSACHUSETTS.

Chapter I.

THE ORGANIZATION, ADMINISTRATION, AND FINANCING OF THE PUBLIC SCHOOLS OF WINCHESTER.

CONTENTS.—1. Town and school organization; town of Winchester; school committee. 2. Financial support of schools; expenditure per pupil; property valuation; tax rate of towns; expenditures within the system; proportion of city funds apportioned to schools. 3. Elementary teachers and their supervision; training of; experience of; salaries; proposed salary schedule; need of supervision; supervision of special subjects; office hours for principals. 4. School population and progress; school attendance; work permits; age-grade distribution; promotions and failures; grading; health activities. 5. Summary of conclusions and recommendations.

1. TOWN AND SCHOOL ORGANIZATION.

THE TOWN OF WINCHESTER.

Winchester is a typical Boston suburban residential town, 8 miles northwest of Boston, on the Boston & Maine Railroad. It is also connected with Boston by a good highway and by two electric railways. In consequence the city of Boston is easy of access for the many residents of Winchester who have business interests in the city. In area the town embraces about 6 or 7 square miles of territory, the boundary lines making practically an irregular pentagon. Its greatest length is approximately 4 miles and its greatest width somewhat more than 2 miles. The population is densest around the center, from which section most of the children come. It is doubtful whether there are many other suburban towns in any section of the country more beautifully located. Through it flows the Aberjona River, winding around the hills, meandering through the Mystic Valley, and widening here and there into ponds and lakes. Bordering the river and the ponds are spreading trees and grassy banks. To the natural beauty of the place the town has added many artistic touches—roadways winding about the hills, bridges, dams making beautiful waterfalls, homes with spacious lawns, parklike in appearance, laid out with trees and shrubbery. Then there are spaces just as nature made them. The general impression one receives is that of a park partly made and partly natural, with people living in it.

When what is now Winchester was first settled it was included in the region called Charlestown. The valley in which it mainly lies was part of the lands granted to Charlestown in 1640. Two years later it, with Woburn, was separated from Charlestown and then for two centuries it remained a part of Woburn, being known as South Woburn. It was not until 1850 that it acquired its independent standing as an incorporated town, when it was named in honor of Col. Winchester. At that time the population was approximately 2,500. Now it is 10,391, as given in the Federal census of 1920.

While Winchester is largely a residential town, occupied by those having business interests in Boston, a number of local industries have sprung up. For example, a tannery, a laundry, a gelatin and glue factory, and factories for making leather machinery, spindles, felt wheels, etc., employ a number of workers, many of whom are foreign-born, whose children attend the schools.[1] These plants are located for the most part in the northern part of the town; consequently, the homes of the employees are likewise located in that section of the town.

The town government is practically a pure democracy; its affairs being settled in the town meeting, so characteristic of New England. In the town meeting the people elect the town officers—the selectmen, school committeemen, town clerk, etc., and vote funds for roads, bridges, police, the schools, and in fact for everything for which the town expends money.

THE SCHOOL COMMITTEE.

The school committee of Winchester, as now composed, consists of three members, one elected each year at the town meeting. The State law of Massachusetts permits the towns of the State to increase or decrease the number of members so long as the number shall always be divisible by three. In accordance with the provision of this law, Winchester, at a town meeting held in March, 1920, voted to increase the number to six. This action becomes effective in March, 1921.

Under Massachusetts law the power to levy taxes for school maintenance or to determine the amount which shall be provided is not vested in town school committees, as is the case in many of the small cities of the country. Each year the school committee prepares an estimate of the amount needed for the ensuing year. This estimate is submitted to the town finance committee, which, in turn, submits the budget with its recommendations to vote of the people at the town meeting. After formal adoption at the town meeting, within the limits of the aggregate appropriation the school committee is allowed much latitude, as it should have, in the expenditures which it is called upon to authorize.

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[1] For racial analysis of the population, see Ch. II.

While this procedure differs widely from that followed in most States, it has the merit of keeping the schools prominently before the people. The school committee, the superintendent, and teachers are necessarily obliged to inform the people as to the needs of the schools. The present method in Winchester seems to secure results which are as satisfactory as those obtained in places where school boards have more power in the matter of raising revenue.

The school committee is organized with a president, a member of the board, and a clerk who is the superintendent of schools. The plan of having the superintendent act as clerk is a commendable arrangement for a small school system, especially if his secretary attends to all the details. In this way the superintendent is brought into more intimate relations with the business matters of the schools. The plan is also more economical than that of employing some one outside the school system to write up the records of board meetings and to keep the books.

The proper relationship between the school committee and the superintendent of schools seems to obtain. The school committee considers it its function to act largely as a legislative-committee, in so far as it can under the town government, and the function of the superintendent to be that of an executive officer of the committee. The superintendent is given power to nominate teachers, to recommend textbooks and supplies, to prepare courses of study, to assign teachers to the schools and grades where he thinks they can do their best work, to promote pupils, and to make up the school budget for the action of the school committee before its presentation to the town meeting. This division of functions is in accord with the best theory and practice in school administration.

2. THE FINANCIAL SUPPORT OF THE SCHOOLS.

EXPENDITURE PER PUPIL.

As previously stated, the funds for the Winchester schools are voted at the annual town meeting. The question may be asked: "How well does the town provide for its schools in comparison with other places?"

Compared with other towns and with several cities in Massachusetts, Winchester ranks well in the amount expended per pupil, based on the average number belonging, as may be noted from the following table:

Expenditure per pupil for total current expense.

Cities.	Elementary.	High school.	Cities.	Elementary.	High school.
State of Massachusetts (average)	$43.64	$89.58	Arlington	$41.77	$82.79
Brookline	67.65	133.10	Winchester	48.35	104.36
Dedham	43.60	59.58	Milton	60.99	108.20
Boston	49.41	97.54	Belmont	39.62	95.16
Newton	47.62	85.55	Wellesley	61.17	109.99
Springfield	52.51	146.42	Watertown	40.28	89.89
Waltham	47.19	75.55			

From the foregoing table it is seen that Winchester expended on her elementary schools $4.71 per pupil more than the average expenditure for elementary schools in the State, and on her high school $14.78 per pupil more than the average high-school expenditure for the State. Compared with the 11 other towns listed in the table in this respect, Winchester ranks No. 6 for the elementary schools and No. 5 for the high schools, when the city with the largest expenditure is ranked No. 1.

If the cost per pupil runs practically the same year after year, the cost of educating a child in the Winchester schools is $804.24; that is, every pupil graduating costs the town this amount. The following table shows what it costs Massachusetts and some cities in the State to take a child through the schools:

Cost of educating one pupil for 12 years.

Cities.	Elementary school, 8 years.	High school, 4 years.	Elementary and high school, 12 years.
State of Massachusetts	$349.12	$358.32	$707.44
Brookline	541.20	532.40	1,073.60
Dedham	348.80	238.32	587.12
Boston	395.28	390.16	785.44
Newton	380.96	342.20	723.16
Springfield	420.08	585.68	1,005.76
Waltham	377.52	302.20	679.72
Arlington	334.16	331.16	665.32
Winchester	386.80	417.44	804.24
Milton	487.92	432.80	920.72
Belmont	316.96	380.64	697.60
Wellesley	489.36	439.96	929.32
Watertown	322.24	359.56	681.80

Compared with a group of cities with between 10,000 and 25,000 population in different sections of the country, the cost per pupil places Winchester in a position of comparatively high rank, as may be seen in the following table:

Expenditure per pupil for total current expense.

Boise, Idaho	$95.25	Fresno, Calif	$58.52
Brookline, Mass	85.97	Parkersburg, W. Va	58.44
Hackensack, N. J	83.02	Clinton, Iowa	58.35
Great Falls, Mont	74.53	Albuquerque, N. Mex	57.07
Sioux Falls, S. Dak	71.02	Newport, R. I	54.89
Wilkinsburg, Pa	69.75	Leavenworth, Kans	54.61
Cheyenne, Wyo	69.16	Phoenix, Ariz	54.45
Winchester, Mass	**64.95**	Burlington, Vt	52.10
Colorado Springs, Colo	62.88	Battle Creek, Mich	50.93
Bellingham, Wash	62.92	Ithaca, N. Y	50.33
Fargo, N. Dak	62.55	Ogden, Utah	49.30
Madison, Wis	61.71	Grand Island, Nebr	48.30
Concord, N. H	59.46	Mankato, Minn	47.49
Salem, Oreg	58.94		

The cost per pupil for Winchester, based upon average daily attendance for both elementary and high school and upon total current expense, is $64.95, while the median for the foregoing group of cities is $58.94.

Another question may properly be asked: "Though Winchester ranks well with the other cities on the amount expended per pupil, is it expending as much as they are in proportion to its wealth"? While it pays much more per pupil than does the State as a whole, it is much more able to do so. Among the 354 towns in the State, Winchester ranks 34 from the top in its ability to pay, based on property valuation per pupil, while it ranks 224 in expenditure for school support per $1,000 valuation. Comparing Winchester with the 11 towns and cities listed in a previous table, it is found that it ranks No. 5 from the top in wealth per school pupil. The following table shows this fact:

Property valuation per pupil, based on average number belonging (1919)

Brookline	$22,471	Newton	[illegible]
Boston	14,155	Watertown	[illegible]
Wellesley	14,114	Belmont	[illegible]
Milton	12,487	Arlington	[illegible]
Winchester	**11,208**	Dedham	[illegible]
Springfield	10,965	State of Massachusetts	[illegible]
Waltham	10,[illegible]2		

Recently the Bureau of Education collected data to show the ta for school purposes in the cities of this country. The rate is b upon the estimated real value of the property assessed. The ing table shows the rank of Winchester compared with 24 ot in different sections of the country with between 10,000 a population:

Tax rate on estimated true valuation, 1917–18, of 25 towns and cities.

	Mills.		Mills.
Hackensack, N. J	12.87	Evanston, Ill	7.53
Burlington, Iowa	11.97	Battle Creek, Mich	6.72
Clinton, Iowa	11.06	Phœnix, Ariz	6.25
Elgin, Ill	10.00	Leavenworth, Kans	6.00
Keene, N. H	10.00	Fresno, Calif	5.95
Jefferson, Mo	9.45	**Winchester, Mass**	**5.71**
Sioux Falls, S. Dak	8.23	Mankato, Minn	5.46
Elkhart, Ind	8.13	Colorado Springs, Colo	5.40
Parkersburg, W. Va	8.00	Madison, Wis	5.39
Albuquerque, N. Mex	8.00	Adrian, Mich	5.30
Wilkinsburg, Pa	8.00	Long Beach, Calif	5.20
Boise, Idaho	8.00	Cheyenne, Wyo	4.66
Mont Clair, N. J	7.80		

The rate in Winchester falls below the median by several mills, and scarcely gets into the lower part of the middle half of cities. Neither is the school tax rate of Winchester high in comparison with that of other towns and cities in Massachusetts with between 10,000 and 25,000 population, as may be seen in the table that follows:

Tax rate for schools (1917–18).

	Mills.		Mills.
Wakefield	7.78	Melrose	6.72
North Adams	7.75	Medford	6.45
Revere	7.27	**Winchester**	**5.71**
Methuen	7.12	Winthrop	5.67
Plymouth	7.04	Newburyport	5.37
Milford	6.83	Leominster	5.21
Weymouth	6.87	Watertown	5.15
Woburn	6.76	Peabody	4.22
Marlboro	6.75		

The median city pays for its schools what is equivalent to a rate of 6.72 mills, or a mill more than Winchester pays. Again, in this table Winchester just gets into the lower part of the middle half of the cities listed. Many of the cities paying the highest rate are less able to do so.

From the foregoing data it is obvious that Winchester, in comparison with what many other cities are doing, is well able to expend upon her schools much more than she is now doing. Financially she can well afford to make her schools the model schools of the entire country.

EXPENDITURES WITHIN THE SYSTEM.

Just what proportionate amounts of the funds at the disposal of the school committee should go for general control, instruction, and other purposes must depend to a certain extent upon local conditions. For instance, a city in the North needs to pay more for operation—janitors, fuel, light, etc.—than a city in the South, where the winters are short.

Since general practice is the only standard by which to compare, the following table has been prepared to show how each dollar of current expense is divided in Winchester and in other cities:

Showing how each $1 of school expenditure is distributed (1917–18).

Purpose.	Winchester.	Cities with between 10,000 and 30,000.	All cities over 2,500.
	Cents.	*Cents.*	*Cents.*
Business	0.5	1.6	1.8
Superintendent's office	3.7	3.3	2.8
Supervisors	2.9	2.7	1.5
Principals	4.7	6.1	6.4
Teachers	60.7	58.4	61.8
Textbooks and supplies of instruction	5.7	4.7	4.1
Janitors	7.9	6.8	6.4
Fuel, water, light, and janitor supplies	8.8	8.0	6.4
Maintenance	2.3	4.9	4.5
Auxiliary agencies	2.8	1.8	2.0
Fixed charges	.0	.5	1.1
Night schools	.0	1.2	1.2

From the foregoing table it may be seen that Winchester divides each dollar in practically the same way as the average city of its size. The proportion paid principals is smaller; also the amount expended for maintenance. The smaller proportion expended for principals is no doubt accounted for by the fact that only two principals—the high-school principal and the principal of the Wadleigh—have any supervisory duties. The smaller proportion expended for maintenance may be accounted for by the fact that the school board employs a custodian of property who himself does much of the repair work or sees that it is done economically.

Another question may be asked: "Does Winchester appropriate as large a proportion of its town income to the schools as do other small cities?" Data collected in 1917 show what proportion of their city funds 41 of the smaller cities appropriate to schools. As may be seen in the accompanying table, Winchester apportions a small per cent compared with that appropriated by the 41 other cities.

Per cent of city funds apportioned to schools (1917).

	Per cent.		Per cent.
Fairmont, W. Va	0.64	East Chicago, Ind	0.43
Muscatine, Iowa	.59	Missoula, Mont	.43
Dubois, Pa	.58	Winfield, Kans	.43
Homestead, Pa	.54	Goshen, Ind	.42
Hackensack, N. J	.54	Adrian, Mich	.41
Parkersburg, W. Va	.54	Emporia, Kans	.40
Beaver Falls, Pa	.52	Spartanburg, S. C	.40
Meadville, Pa	.52	Tonawanda, N. Y	.39
Bethlehem, Pa	.50	Fargo, N. Dak	.38
Lawrence, Kans	.49	Chickasha, Okla	.36
Greensburg, Pa	.48	Lewiston, Idaho	.36
Marietta, Ohio	.47	Boise, Idaho	.36
Trinidad, Colo	.47	Bloomfield, N. J	.35
Warren, Ohio	.46	Melrose, Mass	.30
Hutchinson, Kans	.46	Selma, Ala	.30
Piqua, Ohio	.45	**Winchester, Mass**	**.29**
Braddock, Pa	.45	Plainfield, N. J	.29
Elyria, Ohio	.45	Athens, Ga	.25
Ironwood, Mich	.45	Mankato, Minn	.24
Sioux Falls, S. Dak	.44	Marshall, Tex	.23
Morristown, N. J	.44	Greenville, Miss	.19

Winchester apportions 29 per cent of the entire income of the town, while the median city of the list apportions 44 per cent.

These are the only data available for the smaller cities, but statistics are at hand for 213 cities having a population of 30,000 or more. On an average these cities apportion 30.8 per cent of their total expenditures to their schools, or 1.8 per cent more than Winchester apportions. Judging from these facts, no one in Winchester can say that the town is giving the school department more than its share of the town's funds.

CONCLUSION.

To say that Winchester is not expending more per pupil than is usually expended would be to misstate the facts; to say that it is paying up to its ability as compared with the ability of other towns and cities would also be to misstate the facts; and to say that the town is apportioning an undue share of its funds to the schools would be another misstatement.

3. ELEMENTARY TEACHERS AND THEIR SUPERVISION.

TRAINING OF ELEMENTARY TEACHERS.[2]

The generally recognized minimum educational and professional standard for elementary teachers is four years of high-school and, in addition, two years of normal-school work. With only a few exceptions the Winchester teachers measure up to this standard, and in several cases beyond it. Only 11.63 per cent of the elementary force have attended school fewer than six years beyond the eighth grade and all have attended five or more years, as may be noted in the following table:

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[2] For discussion of high-school teachers, see Ch. V.

Education of elementary-school teachers.

Years beyond elementary school.	Teachers.	Per cent.
4–5	0	0.00
5–6	5	11.63
6–7	33	76.74
7–8	5	11.63
8 or more	0	.00
Total	43	100.00

Thirty-three of the 43 teachers are graduates of high schools and of the two-year normal-school course. Five have three years of normal school or college work. Of the five who have had only five years' schooling beyond the eighth grade, four attended normal school and the other attended college.

Another measure of the preparation of the teacher is her inclination to keep up with the progressive movements in education. A teacher may do this by attending summer school, by pursuing university extension courses, or by extensive reading.

Twenty of the 43 elementary teachers report that they have attended summer school or taken extension courses within the past three years. The number should be larger. Very few teachers can be progressive unless they attend school for several weeks every three years. A normal-school diploma should not end a teacher's preparation, but rather begin it.

Though not all of the Winchester teachers have attended school within the past three years, practically all have read rather voluminously professional books treating of subjects now engaging the attention of school people. Among the books read were those treating of educational tests and measurements, supervised study, motivation, socialized recitation, the project method, teaching children how to study, methods of teaching citizenship, and health teaching.

TEACHING EXPERIENCE.

The majority of the elementary teachers have had ample experience to make them efficient, 25 of the 43 having taught fifteen or more years, and 34 ten or more years. None has had less than four years' experience. Fourteen of the 43 have had less than four years' experience in Winchester. Seven, or 16 per cent, are teaching their first year in this town. The following table will show the facts:

Experience of elementary-school teachers.

Years.	Total experience.	In Winchester.	Years.	Total experience.	In Winchester.
Less than 1 year	....	1	9	....	....
1	....	6	10	6	1
2	....	3	11	2	1
3	....	4	12	....	1
4	2	1	13	....	2
5	1	1	14	1	3
6	2	1	15 or more	25	16
7	1	2			
8	3	....	Total	43	43

TEACHERS' SALARIES.

The town of Winchester is to be commended highly for voting within a year an increase of about $400 a year for each teacher, which brings the salary of most of the elementary teachers to about $1,400 or $1,450 and the salary of the high-school teachers to $1,600 for women. This increase raises the elementary salary schedule to a minimum of $1,250 and a maximum of $1,450. In 1914 the minimum was $650 and the maximum $800. The larger salaries in 1920 represent nothing more than the increased cost of living. In other words, the teachers receive practically the same salaries as in 1914, i. e., the purchasing power of $1,450 is no more, or not as much as the purchasing power of $800 six years ago.

The question may be asked: Were salaries high enough in 1914? Considering the amount of time and money required for a teacher to prepare herself and the demands made upon her in the matter of dress, contributions, etc., the answer obviously is, no.

If it is obvious that salaries in Winchester were not high enough in 1914, they are not high enough now, or at least the maximum is not sufficient either in the elementary schools or in the high schools. Possibly a minimum of $1,200 for elementary teachers and a minimum of $1,600 for high-school teachers would secure good normal school and college graduates without experience.

A principle to follow in making a salary schedule is to pay such a salary as to secure teachers of standard academic and professional preparation and then to increase the salaries to a high maximum, so as to retain the best teachers and to add an incentive for growth and to assist in maintaining the morale of the teaching corps.

After a teacher of standard qualification has been employed at the minimum salary, she should be advanced by yearly increments of at least $75 to $100 for a long period, i. e., if the work is satisfactory and if the teacher is giving evidence of growth. No other should be retained.

In order to provide a better method of promoting teachers, the following schedule is suggested, both for elementary and high school:

Proposed salary schedule.

Group of teachers.	Length of time of appointment.	Salary schedule for each group.				Yearly increase.	Year in which group maximum is reached.
		Elementary.		High.			
		Minimum.	Maximum.	Minimum.	Maximum.		
A. One-year teachers elected each year (probationary for three years).	1	$1,200	$1,350	$1,600	$1,750	$75	Third.
B. Three-year period	3	1,425	1,575	1,825	1,975	75	Third.
C. Five-year period	5	1,650	1,925	2,050	2,350	75	Fifth.
D. Eight-year period	(1)	2,000	2,525	2,275	2,950	75	Eighth.

[1] Until retired.

A schedule such as the one prepared would have teachers who enter group A upon a probationary status subject to reelection for each year for three years. At the end of this period those who are unsatisfactory should be dropped from the corps and those who are rated successful should be promoted to group B, where they will automatically advance by $75 increments for a period of three years. When the teacher has reached the maximum of group B, the board may then promote her to group C if she has met the requirements demanded for promotion or keep her at the maximum salary of group B until she does qualify for group C. In group C the teacher is advanced by $75 increments for a period of five years. When the maximum of group C is reached the teacher who has won promotion by her success in the classroom and by her efforts at self-improvement may be promoted to group D, where she will remain until she retires, except for specified cause. If in the judgment of school officials a teacher has not merited promotion, she can be retained at the maximum salary of the group she is in. The group arrangement permits the school board to set up certain standards to be attained at the end of the periods.

This suggested schedule is based upon the supposition that those teachers entering group A have just graduated from normal school and are beginning to teach their first term. If inexperienced teachers are not employed, teachers who have taught elsewhere may be employed and placed in the group to which their experience and preparation entitle them.

Promotion from group to group beyond the group B teachers should be granted only to those who have shown special merit and have given evidence of valuable professional study. To satisfy the latter condition the board might require the candidate for promotion to spend a year in study at some recognized college or university, or a year in teaching in some good school system in another part of the country, or perhaps a year of study and travel might be combined.

This suggested schedule is designed to correct a weakness in the Winchester schedule by providing a wider range between the minimum and maximum and to provide a means for recognizing merit. Everyone knows that some teachers in a school system are worth very much more than others, and some grow more rapidly than others. It is known, too, that this worth is not dependent upon length of service. Furthermore, the Winchester scale of salaries furnishes no inducement for special industry or for effort for self-improvement. The recent flat increase of $400 for each teacher is evidence of this fact. Again, there is a tendency among teachers as among all workers on salary, when middle age is reached and the maximum salary is obtained, to permit the desire for a comfortable, easy-going life berth to outweigh the ambition for steadily increasing personal efficiency, which can be gotten only at the expense of hard work and many denials of personal pleasure. A salary schedule with only a range of $200 between minimum and maximum and a maximum beyond which teachers can not advance unless funds are specifically voted at town meeting operates powerfully to inhibit growth.

By adopting such a salary schedule an adjustment can be worked out between a teacher's proper desire for security of tenure and the board's proper desire to eliminate the teachers who do not continue to grow in efficiency. At the same time the teacher knows that efforts at self-improvement will find tangible reward in terms of salary increase.

Sufficient funds to increase the salaries of elementary-school teachers may be had when the small schools are consolidated into two or three large ones. At present there are 39 elementary-school teachers, exclusive of kindergarten and special teachers. The average number of pupils to a teacher is 33. If it were possible to give each teacher 40 pupils, as it would be with buildings planned as recommended in this report, only 32 teachers would be needed, or 7 fewer than at present. This would represent a saving of $9,800, or enough to increase the salary of each of the 32 teachers about $300 a year.

NEED OF EFFICIENT SUPERVISION.

Winchester is in need of more adequate supervision, for as the work is now organized, as pointed out elsewhere in this report, there is little supervision, the teachers working for the most part independently of one another, a situation which is typical of town-school systems.

There are eight elementary-school buildings in the department, a junior high-school building, and a high-school building. The elementary buildings are all small. None of the principals is allowed any free time for supervision and for attending to the multitude of details which crowd in on the principal of even the small schools.

At present the only supervision of elementary-school subjects, except music, art, and gardening, is limited to what the superintendent can give. A supervisor of elementary-school subjects of the first six grades seems to be very much needed. The commission recommends that such an addition to the corps be made.

The question might arise: What would remain for the superintendent to do if an elementary supervisor were employed? The survey committee finds that the duties of the superintendent in Winchester are large and widely diversified. He must look up new teachers and pass upon their qualifications; he must become acquainted with textbooks, attend educational meetings in the State and elsewhere, consult with teachers and with parents, hold teachers' meetings, make recommendations regarding the general policies of the schools; and, by no means least of all, he must keep the people informed as to the needs of the schools. In consequence of these duties, as the work is now conducted, it is possible for the superintendent to visit the teachers only infrequently, and then for but a few minutes at a time.

In point of fact, the superintendent's work should be so organized and he should be given sufficient clerical assistance to enable him to spend the greater part of his time in the schools. The need for the superintendent to gain a first-hand knowledge of the work of the schools under his supervision is not removed by the appointment of a supervisor of the elementary grade. Her work is of a different character from that which the superintendent can best render. The one can not take the place of the other.

If a supervisor of the elementary grades were employed, the superintendent would not visit less than he now does, but he could work more effectively, since he would have some one to assist him not only in a diagnosis but in applying remedies. He would visit classrooms, and if he noted any teacher that needed help he would assign the supervisor the task of improving the instruction of that teacher; or if the supervisor by means of objective tests or by observation discovered that a teacher is not obtaining good results, the superintendent could help ascertain the cause and suggest methods for improvement. Supervision would not be haphazard, but more nearly on a scientific basis.

Standardized tests in arithmetic, reading, and other subjects have been given by the superintendent and the instruction diagnosed to a certain extent by the aid of these tests; but the principals being teaching principals, and the superintendent having to give so much of his time to administrative problems, there has not been that constructive criticism necessary. A competent supervisor would supply this.

SUPERVISION OF SPECIAL SUBJECTS.

In Winchester there are special supervisors for music, home and school gardening, and physical instruction. The art instruction is given by the art students of Boston University. These are under the supervision of the university art instructor. This plan is theoretically not correct, and the results are poor. It is practically impossible for these art students to coordinate their instruction with the other subjects, consequently they present it without reference to other school activities. A better plan would be for the school committee to employ an art supervisor on full time, so that a course of study could be formulated with reference to other subjects, and so that the teachers could be instructed in art and in methods of teaching it. If such a supervisor were employed there would be no objection to having art students come to the schools to observe and to assist, but they should work under the direction of some one connected with the Winchester schools, some one who knows its aims and purposes, some one who will relate art to the work in home economics, industrial arts, and other subjects. One of the most frequent complaints heard from teachers was that the work in this department is inefficient through lack of proper correlation with other subjects.

The plan of music supervision seems entirely satisfactory, as does the plan of supervising home gardening. For the home-garden work a teacher is employed the entire year to create an interest in gardening and to give it direction; also to supervise nature study during the winter months.

REGULAR OFFICE HOURS FOR PRINCIPALS.

The principals of elementary schools have charge of a room and are the regular teachers for that room. Besides this they must attend to the administrative details of the school and must answer telephone calls and meet parents who wish to confer with them. These visits and telephone calls now come at all hours of the school session and constitute frequent serious interruptions to the class work of the principals. To lessen this evil there should be a regular office hour agreed upon by the principals and the superintendent, which should be the same for all elementary schools and should be printed on the report cards periodically sent home to parents, so that it may become fixed in the minds of the parents. Then it should be announced by the superintendent that parents are requested to call on principals only during the office hour. Telephones in the school should be connected only with the superintendent's office. Parents should have no direct telephone connection with the schools. The schools, both elementary and high, are now seriously and needlessly disturbed by telephone calls from parents, often on trivial matters, to the detriment of the teaching.

4. SCHOOL POPULATION AND PROGRESS.

The number of children in Winchester is known exactly, since the school census is taken each year and is kept up to date by means of a cumulative card-file system. Whenever a pupil moves from the town his census card is withdrawn from the files, and whenever a pupil moves in a card is added. In this way a continuous census is kept. This census is used by teachers and attendance officers to check up enrollment at the beginning of the term and at other times. It is thus known how many and what children are not in school. This being known the attendance officer ascertains the cause of nonattendance.

The school census for the year 1918–19 shows that there were in Winchester 2,144 children from 5 to 16 years of age, distributed according to age, as follows:

5 to 7 years	428
7 to 14 years	1,396
14 to 16 years	320
Total	2,144

The enrollment of children 5 to 16 years of age in public and private schools for the same year was 1,878, distributed by ages, as follows:

Enrollment in schools.

Ages.	In public schools.	In parochial schools.	In other private schools.	Total enrollment.
5 to 7 years	216	54	11	281
7 to 14 years	1,076	248	30	1,354
14 to 16 years	239	2	2	243
Total	1,531	304	43	1,878

By comparing the enrollment with the census, it may be seen that 266 children between 5 and 16 years of age were not enrolled. This is accounted for by the fact that some children do not go to school at 5 years of age. Of the 266 children who were not in school, 147 were between 5 and 7 years of age; 42 between 7 and 14; 77 between 14 and 16. Of those between 7 and 14, some were not in school on account of poor health and others had valid reasons. Practically all of those between 14 and 16 not enrolled had work permits. Thus, to a commendable degree, the children of Winchester are accounted for, which is necessary for the proper enforcement of the compulsory attendance law.

SCHOOL ATTENDANCE.

While the school enrolls every child legally required to attend school, regularity of attendance could be greatly improved. Only 60.9 per cent of the elementary pupils and 70.6 per cent of the high-school pupils attended school during the school year 1919–20 more than 160 days, or the equivalent of an eight months' term. The record for the entire system was 62.9 per cent.

The table which follows shows what per cent of pupils in each school attended more than 160 days:

Proportion of pupils attending school more than 160 days (1919–20), distributed by schools.

School:	Per cent.
Prince	76.5
Rumford	75.8
Wadleigh	75.6
Chapin	56.5
Mystic	53.5
Washington	52.7
Gifford	49.6
Wyman	43.4
Highland	42.9
All elementary schools	60.9
High school	70.6
Entire system	62.9

Perhaps many in Winchester think that there is greater irregularity of attendance in the Chapin and Rumford Schools, where there are many foreign children, than in the schools south of the center of town, but this is not true, for only one other school makes a better showing than Rumford, while the Chapin School ranks above the Mystic, Washington, Gifford, Wyman, and Highland Schools. Similar data collected for the previous year disclose the same situation as between the schools of the north and south sections of the town in respect to this matter of irregularity of attendance.

No doubt the explanation of the better attendance in the Chapin is that the foreign parents keep their children in school despite inclement weather and that they keep them out less often for afternoon parties and matinées. One complaint heard from teachers and others was that in some sections of the town it is not unusual for children to fail to return for school in the afternoon, or else ask to leave before the close of the afternoon session, because of social affairs.

It is far from the wish of the survey commission to condemn social activities. They are needed to help round out the life of the child, but there is a time for everything, and the time for social events in which children participate is not during school hours, nor even during the school week if thereby the children are kept up so late at night that the amount of sleep necessary for health and for good school work is not secured.

Some of the parents in Winchester should realize that the best cooperation that they can give the schools is to see to it that their children are regular in attendance and that they are not to be excused for social functions. Possibly some parents who have been making this a practice have not thought that they are interfering with the work of the school as a whole as well as with the advancement of their own children.

In consequence of this irregularity of attendance, many pupils in Winchester fail in their work. At least, there is a relation between attendance and promotion that is significant. Of the pupils who attended less than 50 days, 62.3 per cent failed in June, 1920; 54.7 per cent of those who attended from 51 to 100 days; 35.9 per cent of those who attended from 101 to 150 days; 14 per cent of those who attended more than 150 days, and only 10.7 per cent of those who attended more than 170 days. In other words, as one would naturally expect, the greater the regularity of attendance, the fewer the failures.

WORK PERMITS.

One of the most surprising things observed by the survey commission was the fact that more than 50 employment certificates are granted each year to boys and girls from 14 to 16 years of age. The following table shows the number of certificates granted from 1917 to 1919 and the grades in which the pupils were enrolled when the permits were issued:

Number of work permits granted, 1917–1919, distributed by grades.

Grades.	1917			1918			1919			Total boys and girls.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.	
Fourth										
Fifth	10	3	13	2		2	12	3	15	25
Sixth	5	2	7	5	1	6	14	1	15	28
Seventh	9	7	16	7	7	14	10	2	12	42
Eighth	7	4	11	2	3	5	14	2	16	32
Ninth	3	2	5	3	8	11	10		10	26
Tenth				7	2	9	2		2	11
Eleventh				2	1	3				3
Twelfth										
Total	34	18	52	28	22	50	62	8	70	172

The majority had not completed the eighth grade. Fifty-three of the 172 had not completed the sixth grade. The present law requiring the completion of the sixth grade was not in force the years for which the foregoing data were given.

To the work certificates granted children between 14 and 16 years of age might be added those granted young men and women from 16 to 21 years of age. From January, 1919, to January, 1920, 153 such work permits were issued.

Counting the number of work permits granted to children between 14 and 16 years of age, it would seem that there are enough boys and girls in Winchester at work to make it necessary to organize a continuation school, even if not compelled to do so by the State law, which does not make continuation work mandatory in a town if there are fewer than 200 pupils between 14 and 16 years of age legally at work. Even if there were only 20 in Winchester, a continuation school should be provided. As it is, there are about 100 children between 14 and 16 years of age out of school on work permits. Surely this is a sufficient number to justify organizing a continuation school.

The following table shows that, beginning at 14 years of age, there is a considerable elimination of pupils. This table gives the number of pupils enrolled at each age for every 100 at 6 years of age:

Age distribution of pupils enrolled in 1919–20.

Years of age:		Years of age:	
Under 6	49	13	78
6	100	14	53
7	96	15	56
8	102	16	52
9	80	17	38
10	78	18	24
11	82	19 or more	9
12	90		

It may be noted that there are only slightly more than half as many who are 14 years of age as there are those who are 6 years of age. This is accounted for by the fact that many secure employment certificates at the age of 14. Of course, the fact must be considered that there are more children 6 years of age than there are 14 years of age.

Data were collected to ascertain the number of children "under age,"[3] of "normal age," and "over age" for their respective grades. Two sets of data were prepared, one showing the age-grade as of September 1 and the other as of March 1. Since many children in Winchester enter school at 5½ years of age, it was necessary to take ages as of March 1, in order to compare with other schools where children enter at 6 years of age and whose ages are taken as of September 1.

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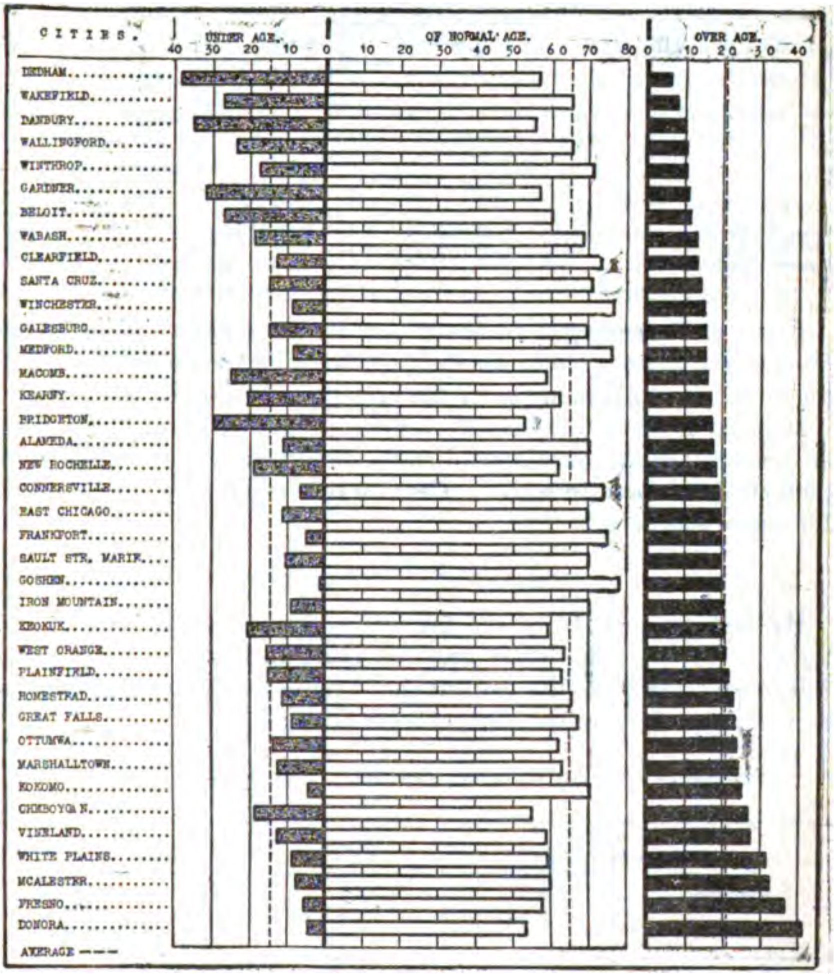
[3] Children in the first grade not 6 years of age at date ages are taken are considered "under age," those 6 to 8 years of age are classed as "normal age," and those 8 years of age or over are considered "over age."

The following chart shows that the Winchester schools have few "over age" children, compared with the number in 37 other places. These percentages include high-school pupils.



Per cent of pupils under age, of normal age, and over age in the cities of group B, 1917–18.

The following table shows the age-grade distribution of elementary-school pupils, the ages being as of September 1, 1919, and the per cent of pupils "under age," of "normal age," and "over age" for their grades:

Age-grade distribution, elementary-school pupils, Sept. 1, 1919.

Ages.	Grades.								Total.
	1	2	3	4	5	6	7	8	
5	78	......	......	......	......	......	......	......	78
6	96	63	1	......	......	......	......	......	160
7	32	76	35	11	......	......	......	......	154
8	7	24	61	49	23	......	......	......	164
9	1	8	19	48	46	6	......	......	128
10	2	2	7	15	48	46	3	1	124
11	......	1	4	2	23	59	42	......	131
12	1	......	......	3	5	14	73	50	146
13	......	......	1	......	3	7	37	74	122
14	......	......	1	......	1	1	12	24	39
15	......	......	......	......	......	......	2	9	11
16	......	......	......	......	......	......	......	2	2
Total	217	174	129	128	149	133	169	160	1,259
Per cent younger	35.94	36.21	27.91	46.87	46.31	39.10	26.62	31.88	36.07
Per cent normal	58.98	57.47	62.00	49.22	47.65	54.89	65.09	61.25	57.42
Per cent over age	5.08	6.32	10.09	3.91	6.04	6.01	8.29	6.87	6.51

From the foregoing it is seen that there are many children in the Winchester schools young for their grades. This is no doubt largely due to the fact that many enter the first grade at 5 or 5½ years of age.

In order to know whether the children progress as rapidly entering at 5, the superintendent and teachers should learn how many years each child has been in school. Data on this point were not available for use in this report.

PROMOTIONS.

By making a study of the failures and promotions by subjects, light is thrown upon what progress the pupils are making. The following table gives the percentage of pupils who failed of promotion in June, 1919, in the elementary schools:

Percentage of pupils belonging June, 1919, who failed of promotion.

Schools.	Grades.								Percentage of number belonging who failed.
	1	2	3	4	5	6	7	8	
Chapin	32.35	0	13.05	0	12.50	3.58	......	......	10.06
Gifford	16.67	0	17.57	0	2.04	......	......	......	7.15
Highland	10.52	0	0	0	......	......	......	......	3.13
Mystic	11.11	8.34	8.34	0	......	......	......	......	7.25
Prince	......	......	......	......	......	0	0	......	0
Rumford	23.71	10.34	9.37	0	......	......	......	......	12.89
Washington	21.97	9.10	11.77	9.09	7.00	......	......	......	11.21
Wyman	14.29	0	0	0	2.27	......	......	......	3.09
Percentage of number belonging who failed	19.91	4.06	8.03	1.46	2.54	5.64	0	......	8.20

The number of failures is greatest in the first grade of each school. The Chapin School, for instance, failed 32.35 per cent of the first-grade children, while the Highland and Mystic Schools failed 10.52 and 11.11 per cent, respectively. The great number of failures in the Chapin School is charged to the large foreign element with their language difficulties. Looking further at the table it is seen that there were no failures in the second grade, 13 per cent in the third, and none in the fourth. This raises several questions. First, whether the first-grade standard is not so high that only the better pupils get into the second grade, and whether they are not again sifted in the third grade. Second, whether the first and third grade teachers are not more rigid in their marking than are the second and fourth grade teachers. This same phenomenon occurs in the first and third grades in the Gifford School. The course of study for the Chapin School possibly needs to be better adapted to the foreign children. It can not be expected that children in this school can meet the same requirements in English as the children in the schools coming from homes in which only good English is spoken and in which they learn to read largely by means of children's books supplied them by their parents.

The failures for each grade except the first are not high and the average for all the elementary schools, the Wadleigh not included, is comparatively low, only 8.2 per cent. Or, stated another way, the average promotion rate is 91.8 per cent, but even if this should be the average rate year after year, many children out of every 100 entering the first grade would fail. For illustration, out of 100 children in the first grade, with 19.91 per cent failing, only 80 would go on to the second grade. Continuing this process on until the end of the sixth grade, there would remain only 64 who had not failed at some time during the six years.

A study of the failures, as shown by the following table, makes it clear that arithemetic is responsible far more than any other subject:

Percentage of pupils in each subject of the elementary schools failing to make the passing mark of 70, June, 1919.

Subjects.	Grades.								Percentage of number belonging who failed.
	1	2	3	4	5	6	7	8	
Reading	17.3	7.02	5.70	3.23	5.77	0	....	....	7.57
Arithmetic	16.21	10.16	9.76	4.51	16.76	13.63	3.22	....	11.73
Language	0	0.78	4.87	5.80	8.55	1.51	3.22	....	3.71
Spelling	0	8.59	5.69	5.80	5.77	3.03	0	....	4.53
Penmanship	15.14	4.69	9.76	3.87	2.31	0	0	....	6.38
Geography	....	....	....	1.29	6.30	18.18	6.45	....	5.64
History	....	....	....	....	....	3.03	0	....	2.66

One of the things that attracts the attention is the fact that 16 per cent of the children in the first grade fail to make the passing mark in arithmetic, almost as many as in reading. Another point which attracts attention is the percentage of children not up to the passing grade of 70 per cent in penmanship. The question may be asked: Is arithmetic the most important subject in the Winchester schools, and is it so important that it must be taught in the first grade? The answer to this question is found in the part of this report treating of the course of study. The teaching of penmanship is also discussed in the same section.

The failure by subjects in the Wadleigh School is shown in the following table:

Percentage of failures in seven subjects, Wadleigh School, June, 1919.

Subjects.	Grades.			Percentage of number belonging who failed.
	6	7	8	
Mathematics	12.33	21.62	19.16	18.43
English	8.22	19.82	12.50	14.14
Geography	2.74	22.52	1.66	9.54
History	8.22	1.80	7.50	5.59
Spelling	10.96	2.70	.83	3.94
Penmanship	2.74	.90	4.16	2.63
Reading	.00	.00	.00	.00
Percentage of number belonging who failed	6.45	9.90	6.55	7.75

Here again the greatest number of failures is in mathematics. English is a close second. Geography is responsible for a large percentage of failures in the seventh grade, which reached the very high point of 22.5 per cent.

GRADING.

The elementary schools of Winchester consist of the usual eight grades. Where the number of pupils makes it possible, the less gifted of the same grade are grouped together and the brighter ones are grouped together, constituting a grading within the regular grades. Such grouping is done on the basis of scientific tests of native intelligence, which, although not perfect, are after all more reliable than the mere judgment of the teacher or than any other means we have of determining the native ability of a child. Such grading within grades is highly desirable. The teaching can be much better adapted to each group. The mixing of the bright with the less gifted usually works an injustice to the bright and is no advantage to the dull. In many school systems special provision is made for the exceptionally bright as well as the exceptionally dull. The usual grade instruction is adapted only to children of average ability. In making these classifications, it is obvious that a distinction must be made between the actually dull and those gifted children whose mental processes are merely slow.

More adequate provision should be made in Winchester for children of low mental capacity who are not feeble-minded. They should not be grouped with the feeble-minded.

When new and larger buildings are erected and when a real junior high school is organized, promotions should be made semiannually instead of, as is now done, annually. In that case when a pupil fails of promotion he is kept back only half a year, and gifted pupils will be able to skip a half year several times in their course who can not very easily skip a whole year. Such pupils at present do less skipping of grades than is desirable. The possibility of such rapid promotion is a wholesome incentive for work for bright pupils, who usually do much less work than they are easily capable of. Although the average age of entrance to the high school is low, this is in part at least due not to the rapid promotion of the gifted pupils but to the moderate requirements of the course as a whole in the elementary schools.

HEALTH ACTIVITIES.

The health work in the Winchester schools is conducted by two school physicians assisted by the school nurse. Each elementary pupil is given a regular physical examination every other year and each high-school pupil every year. The teeth are examined twice a year in all the grades except the high school.

5. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS.

1. The proper relationship between the school committee and the superintendent obtains, in that the school committee acts as a legislative body delegating all executive functions to the superintendent of schools.

2. While the expenditure per pupil in Winchester is high compared with that in other cities, the expenditure in proportion to wealth is low.

3. The rate of taxation for school purposes in Winchester is low compared with that in other cities in different sections of the country and with other places in Massachusetts having less per capita wealth.

4. The school committee distributes each dollar for each item of expenditure in about the same proportion as in other cities, somewhat less being expended for principals' salaries and for maintenance.

5. Compared with 41 other cities between 10,000 and 25,000 population, Winchester apportions much less of the city funds to schools, Winchester apportioning 29 per cent and the median city 44 per cent.

6. With only a few exceptions, the elementary-school teachers have had four years of high-school education and in addition two years of normal-school work.

7. Measured in terms of experience, the elementary teaching corps ranks high, more than half having taught 15 or more years.

8. Although teachers' salaries have been increased, this increase has not more than kept pace with the increased cost of living. Since salaries in 1914 were too low, they are still below what they should be to secure and to retain the best teachers.

9. There should be a wider range between the minimum and the maximum salaries. The maximum should be about twice that of the minimum and attained only after some years of successful experience.

10. A salary schedule should be prepared so that increases in salary will depend upon advancement in scholarship, experience, and successful teaching.

11. Since the principals teach, provision should be made for more general supervision. To this end a supervisor for the first six grades should be employed.

12. A supervisor of art should be employed to give her entire time during the school year to this subject.

13. Since the principals teach they should not be interrupted while teaching by calls from parents and by telephone calls. There should be a central exchange in the superintendent's office, so that parents and others would not be in direct communication with the various school buildings.

14. Practically every child of compulsory school age is enrolled in the public or private schools.

15. Although school attendance is comparatively good, it could be improved with more cooperation on the part of parents.

16. Each year a sufficient number of children between 14 and 16 years of age obtain work permits to organize a continuation school.

17. Winchester has few over-age children compared with the number in other cities.

18. There are comparatively few failures; only 8.2 per cent of those belonging in June, 1919, failed of promotion. There are, however, many failures in the first grade, the average for the grade being 19.9 per cent. Arithmetic causes the greatest number of failures.

19. The plan of grouping children according to ability is practical and should be continued, but more adequate provision should be made for children of low mental capacity who are not feeble-minded.

20. When new and larger buildings are erected, promotions should be made semiannually instead of annually as is now done.

in addition, two years of normal-school work. With only a few exceptions the Winchester teachers measure up to this standard, and in several cases beyond it. Only 11.63 per cent of the elementary force have attended school fewer than six years beyond the eighth grade and all have attended five or more years, as may be noted in the following table:

Education of elementary-school teachers.

Years beyond elementary school.	Teachers.	Per cent.
4-5	0	0.00
5-6	5	11.63
6-7	33	76.74
7-8	5	11.63
8 or more	0	.00
Total	43	100.00

Thirty-three of the 43 teachers are graduates of high schools and of the two-year normal-school course. Five have three years of normal school or college work. Of the five who have had only five years' schooling beyond the eighth grade, four attended normal school and the other attended college.

Another measure of the preparation of the teacher is her inclination to keep up with the progressive movements in education. A teacher may do this by attending summer school, by pursuing university extension courses, or by extensive reading.

Twenty of the 43 elementary teachers report that they have attended summer school or taken extension courses within the past three years. The number should be larger. Very few teachers can be progressive unless they attend school for several weeks every three years. A normal-school diploma should not end a teacher's preparation, but rather begin it.

Though not all of the Winchester teachers have attended school within the past three years, practically all have read rather voluminously professional books treating of subjects now engaging the attention of school people. Among the books read were those treating of educational tests and measurements, supervised study, motivation, socialized recitation, the project method, teaching children how to study, methods of teaching citizenship, and health teaching.

TEACHING EXPERIENCE.

The majority of the elementary teachers have had ample experience to make them efficient, 25 of the 43 having taught fifteen or more years, and 34 ten or more years. None has had less than four years' experience. Fourteen of the 43 have had less than four years' ex-half century the modern city has deprived children of two of the important elements in their education—i. e., the opportunity for healthful work and play. It makes no difference whether the city is a metropolis like Boston or a suburb like Winchester. The point is that the modern city home, whether an apartment house or a suburban home, can offer few educational opportunities in the way of healthful work which develops the ability to think by attacking problems to be solved. Unfortunately for the children, the problems are solved so far as shelter, food, and clothes are concerned. There is no planting and harvesting to be done in the city; there are few, if any, animals to be taken care of; and there are no carpenter shops or forges to "tinker" in, thereby enabling the children to learn the ways of tools and materials. Yet children, until recently, have received much of their education through the opportunity to handle tools, to take care of animals, and to experiment in making and using things.

CITIES DEPRIVE CHILDREN OF PLAY.

But not only does the city deprive children of the opportunity for healthful work, it also deprives them of the chance for wholesome play. Children are not naturally bored with life; they are full of vivid interest in it—in investigating, experimenting, testing, finding out things. And yet one of the tragedies of city life is the number of bored and idle children whom anyone can see standing about on the streets, sitting on doorsteps, idling away the time. And it is not surprising, for what is there in an ordinary city street to arouse the creative, constructive-play instinct in children? The irony of the situation is that when they do try to express their natural instincts in play, they are often arrested for disorderly conduct. Play has become a crime in the modern city. But children *will* play, and if not given opportunity for the wholesome expression of it they will express it in other ways, for the city street is a most efficient educator. It can train children more rapidly in the wrong direction than the traditional school with nothing but books and school seats can educate them in the right direction. Street play means education not in health and strength and wholesome living but precocious education in all the vicious sides of city life, which children never forget.

SCHOOLS MUST PROVIDE OPPORTUNITIES FOR HEALTHFUL WORK AND PLAY.

For all these reasons it has come to be recognized that the city school must not only supply the opportunity for study in attractive classrooms under wholesome conditions but it must also return to the children the opportunity for the healthful work and play which the home no longer supplies. The school must have shops and laboratories, drawing rooms and music rooms, auditoriums, gymnasiums, playgrounds, and kindergartens. These are the essential minimum requirements of a modern school plant. It must be a place where the children can not only master the three R's but also find the opportunity to develop their special talents, for democratic education means variety of opportunity in accordance with the needs of each individual. Too many children now are graduated to the sidewalk as failures because the school has tried to make them measure up to a uniform standard instead of giving them the opportunity to express the best that is in them. But that opportunity does not come through exhortation but through the chance for children to try themselves out in many different lines of work. We say that "children learn by doing." If that is so, then the school must give them an opportunity to *do* something; it must become a place where children can live by taking part in the wholesome activities by which children have always been educated. Moreover, if these educational principles are important for native-born children, they are even more important for children of foreign-born parents, who can do far less than the American-born parent in counteracting the undesirable effects of city life upon their children.

FORTY PER CENT OF THE FATHERS OF PUBLIC-SCHOOL CHILDREN ARE FOREIGN-BORN.

The general impressions about a city and the actual facts about it are often very different. The general impression about Winchester is that it is a residential suburb. That is true, but it is only part of the truth. It is also true that in Winchester there are quite a number of industries. There is a tannery, a laundry, a marble factory, a gelatin and glue factory, a watch-hands factory. Besides, there are factories for making felt, felt wheels, petticoats, leather machinery, and spindles. This means that a considerable proportion of the population comprises working people whose children attend the public schools. Moreover, the parents of a large number of public-school children are foreign-born. In 1919 forty per cent of the fathers of public-school children in Winchester were foreign-born. Nineteen countries were represented—Austria, Brazil, Canada, Denmark, England, Finland, France, Germany, India, Ireland, Italy, Mexico, Norway, Poland, Portugal, Russia, Scotland, Sweden, and the West Indies. Of the parents of children in the Chapin School 84 per cent were foreign-born, and 49 per cent of the parents of children in the Rumford School were foreign-born. Thirty-two per cent of the parents of children in the Gifford School, 28 per cent in the Washington School, 39 per cent in the Prince School, 37 per cent in the Wadleigh School, and 37 per cent in the high school were foreign-born. (See following table.)

Distribution of birthplaces of male parents or guardians of children in Winchester schools, May, 1920.[1]

Schools.	United States.		Ireland.		Italy.		Canada.		England.		Sweden.		Scattering.[2]		Total.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
High	170	63	38	14	12	5	30	11	6	2	5	2	10	4	271
Wadleigh	137	63	25	11	6	3	30	14	5	2	7	3	8	4	218
Prince	75	61	11	10	5	5	10	9	2	2	1	1	2	2	106
Chapin	14	15	7	8	64	69	2	2	0	0	3	3	3	3	93
Wyman	64	88	.....	.....	.....	.....	2	3	3	4	1	1	3	4	73
Rumford	22	51	11	26	3	7	3	7	1	2	2	5	1	2	43
Washington	36	72	3	6	.....	.....	6	12	.....	.....	3	6	2	4	50
Gifford	39	68	2	4	1	2	6	11	5	9	1	2	3	5	57
Highland	27	87	.....	.....	.....	.....	1	3	.....	.....	1	3	2	6	31
Mystic	28	85	.....	.....	.....	.....	.....	.....	4	6	.....	.....	1	3	33
Parochial	42	28	56	38	34	23	12	8	3	2	.....	.....	2	1	149
Private	53	92	1	2	.....	.....	3	6	1	2	.....	.....	.....	.....	58
Total	707	60	154	13	125	11	105	9	30	3	24	2	37	3	1,182

[1] Each parent is counted once and assigned to school attended by oldest child.

[2] Includes Scotland 8, Russia 7, Germany 5, Denmark 4, Norway 2, France 2, West Indies 2, Finland 3, Austria 2, India 1, Mexico 1, Portugal 1, Poland 1, Brazil 1.

This large percentage of public-school children having foreign-born parents means that the educational problem is far more difficult than formerly. It means that the school must really be the "melting pot" of all these diverse elements. It means that it is imperative that Winchester erect the best type of modern school building, which shall serve as a social center, and which shall give the children the opportunity to develop the particular talents which all these different nationalities bring to America. Certainly if the modern city makes it necessary to provide playgrounds, shops, and science laboratories for American children, it makes it even more important to provide such facilities for children of the foreign born, since the crowded conditions under which the latter live are such that public playgrounds are absolutely essential, if they are to get the wholesome exercise necessary for every growing child. Again, because of the limited income of their families, these children have, as a general rule, far less opportunity than the American child to develop their gifts in handwork, music, drawing, and science.

There are organizations in Winchester devoted to Americanization work, but apparently there is little realization of the fact that the best Americanization work that could be done would be to erect modern school buildings in which children could be wholesomely occupied all day, and which parents could use in the evening as social centers.

QUESTIONS THAT MUST BE ANSWERED IN PLANNING A BUILDING PROGRAM.

It is obvious from the foregoing that in developing a building program Winchester has much to do to make up for lost time, and also prepare for the future in giving its children the best type of modern educational opportunity. In order to plan a building program wisely and with due regard to economy, it is necessary to obtain answers to the following questions (1) What is the present school population? (2) What is the enrollment in the public schools? (3) Has there been an increase in enrollment in the past five years? (4) In what part of the city is the increase in the future likely to come? (5) In order to eliminate present congestion and also to provide for future growth, how many and what kind of new buildings should be erected and in what parts of the city? (6) What appropriation is necessary to carry out an adequate building program?

SCHOOL ENROLLMENT.

On October 30, 1919, there were 1,662 children enrolled in the public schools. Of this number, 1,342 were in the elementary schools. Five years before (Oct. 30, 1914) there were 1,847 children, of whom 1,501 were in elementary schools. In other words, there has been a decrease of 185 children in all the schools and 159 in the elementary schools alone. Obviously, then, congestion is not the chief problem in a building program for Winchester. In fact, as will be seen from the following table, there are four more classrooms than there are classes in the public schools. The problem to be solved in planning a building program for Winchester is to provide school buildings with modern facilities for all the children and buildings so arranged as to make possible a more economical organization of the schools. The situation respecting enrollment and distribution among the schools of the city for the period 1914–1919 is shown in the following table:

Public-school enrollment by schools, 1914 and 1919—Capacity of school buildings; number of regular classrooms, number of classrooms required.

Names of schools.	Grades.	Capacity, on basis of 40 pupils in a class.	Total enrollment.		Increase (+) or decrease (−) in number of pupils 1914–1919.	Classrooms.			Number of teachers.	Principals.
			October, 1914.	October, 1919.		Number available.	Number required.	Excess of available over required.		
1. Chapin	[1] K-1-6	320	260	220	− 40	8	6	2	6	1
2. Gifford	1-5	160	151	132	− 19	4	4	0	3	1
3. Highland	3-4	80	78	61	− 17	2	2	0	1	1
4. Mystic	1-4	80	55	61	+ 6	2	2	0	1	1
5. Rumford	1-4	160	153	116	− 37	4	3	1	3	1
6. Washington	1-5	160	146	117	− 29	4	3	1	3	1
7. Wyman	1-5	160	173	144	− 29	4	4	0	3	1
8. Wadleigh	6-8	320	333	330	− 3	[2] 8	9	[3] 1	9	1
9. Prince	[4] K-Sp. 6-7	200	152	161	+ 9	[5] 5	4	1	4	1
Total elementary	....	1,640	1,501	1,342	−159	41	37	4	33	9
High school	....	......	346	320	− 26	......	....	....	19	1
Grand total	....	......	1,847	1,662	−185	......	....	....	[6] 52	10

[1] Kindergarten and grades 1 to 6.
[2] Also 1 shop and 1 sewing room.
[3] One less than the number required.
[4] Kindergarten, special grades, and grades 6 and 7.
[5] Also 3 special rooms.
[6] Also 3 special teachers.

TOO MANY SMALL BUILDINGS.

At the present time Winchester, like many other New England cities, is handicapped by having too many small buildings. This means greater cost of upkeep, as well as of initial outlay; also fewer modern facilities for the children. In a large school with many children a community can afford to give a greater variety of facilities. For example, a school of 1,200 pupils can afford such facilities as an auditorium, shops, gymnasium, swimming pool, library, etc., whereas if the children were housed in two school buildings with separate sites, equipment, teaching force, and janitorial service, the total expense of upkeep would obviously be much greater. In other words, the city has something to learn from the country in the matter of both the social and financial advantages of the consolidated school. As a matter of fact, Winchester has just about enough children in the public elementary schools to make one good-sized school; owing to local sentiment and local conditions, however, it will probably be necessary to have at least three—one for the west side, one for the east side, and one for the north end.

TWO METHODS OF MEETING THE BUILDING SITUATION.

Evidently, to provide for increase in enrollment, and also to provide the modern school facilities in which Winchester is so sadly lacking, especially in view of the fact that it has done nothing in the way of school building for nearly 20 years, will involve considerable expense and careful planning. There are two methods by which the program can be worked out.

The first method would attempt to solve the situation by the usual procedure of adding classrooms or new buildings without changing the traditional school organization. All children would be expected to be in school seats at the same time, and if provision were made for special activities, such as shops or cooking rooms, the classrooms would remain vacant when such facilities were in use. If such special facilities were provided, therefore, they would have to be in addition to a classroom for every class.

THE WORK-STUDY-PLAY PLAN OF ORGANIZATION.

A second possible method of solving the building problem of Winchester is what is commonly known as the work-study-play plan, now in operation in some 30 or 40 cities in the country. This plan developed in an attempt to solve the peculiar school problems created by the modern city. It grew out of a recognition of the fact that, as in the case in Winchester, the growth of cities makes the educational problem far more difficult than formerly—in fact, has created a new school problem. The plan represents an attempt to meet these new conditions and to make it practicable, both administratively and financially, for school administrators to provide not only classroom accommodations but also such modern educational facilities, as gymnasiums, auditoriums, shops, and laboratories, where children may be kept wholesomely occupied in study and work and play. The following is a description of the plan taken from Bureau of Education bulletin, 1919, No. 50, part 1: The Public School System of Memphis, Tenn.

> Briefly, the plan is this: A school is divided into two parts, each having the same number of classes, and each containing all the eight or nine grades. The first part, which we will call the "A School," comes to school in the morning, say, at 8.30, and goes to classrooms for academic work. While this school is in the classrooms, it obviously can not use any of the special facilities; therefore, the other school—"B School"—goes to the special activities, one-third to the auditorium, one-third to the playground, and one-third is divided among such activities as the shops, laboratories, drawing, and music studies. At the end of one of two periods—that is, when the first group of children has remained, according to the judgment of the school authorities, in school seats as long as is good for them at one time—the A School goes to the playground, auditorium, and other special facilities, while the B School goes to the classroom.
>
> Under this reorganization on the work-study-play plan all the children would have not only the same amount of time for reading, writing, arithmetic, geography, and history, as formerly—210 minutes—but also 50 minutes of play every day, 50 minutes a day of auditorium, and 50 minutes a day of shopwork every day in the week for a third of the year; science every day for a third of the year, and drawing or music every day for a third of the year.
>
> The following table gives a possible program for the "A School." It will be recalled that there are 12 classes in this "A School," which are divided into 3 divisions of 4 classes each: Division 1, upper grades; division 2, intermediate grades; division 3, primary grades.

The "A School."

School hours.	Regular activities.	Special activities.		
	Academic instruction.	Auditorium.	Play and physical training.	Cooking, shop, science, etc.
8.30- 9.20	Arithmetic—Divisions 1, 2, 3.			
9.20-10.10	Language—Divisions 1, 2, 3.			
10.10-11.00		Division 1	Division 3	Division 2.
11.00-12.00		Entire "A School" at luncheon.		
12.00- 1.00	Reading—Divisions 1, 2, 3.			
1.00- 1.50	History and geography—Divisions 1, 2, 3.			
1.50- 2.40		Division 3	Division 2	Division 1.
2.40- 3.30		Division 2	Division 3	Division 1.

The "B School."

School hours.	Regular activities.	Special activities.		
	Academic instruction.	Auditorium.	Play and physical training.	Cooking, shop, science, etc.
8.30- 9.20		Division 2.	Division 3.	Division 1.
9.20-10.10		Division 3.	Division 2.	Division 1.
10.10-11.00	Arithmetic—Divisions 1, 2, 3.			
11.00-12.00	Language—Divisions 1, 2, 3.			
12.00- 1.00		Entire "B School" at luncheon.		
1.00- 1.50		Division 1.	Division 3.	Division 2.
1.50- 2.40	Reading—Divisions 1, 2, 3.			
2.40- 3.30	History and geography—Divisions 1, 2, 3.			

This program represents a change in the traditional method in several important points. In the first place, it breaks up the custom of having all children in classrooms at the same time and letting the classrooms lie idle when the children go to the auditorium, shops, and playground. In other words, it applies to the public school the principle on which all other public-service institutions are run; that is, the multiple use of all facilities all the time. For example, it is evident that our transportation system is made possible because of the fact that all people do not wish to ride at exactly the same time; concerts and theaters are made available to many people because one person can use another's seat when he does not want to use it; hotels can accommodate thousands of people because they are not run on the principle of reserving each room for the exclusive use of a single individual during the whole year. On the other hand, the public-school system has been run on the principle of reserving a seat for each child during the whole year. All children have to be in school seats from 9 to 12 a. m and from 1 to 3 p. m.; all have to go home to lunch at the same time; and at 3 o'clock all are dismissed and turned out to play.

There would, after all, seem to be no good reason why the principle of other public-service institutions, i. e., multiple use of facilities all the time, should not apply to the school, nor any reason why all children should be in classrooms at the same time, nor why the special facilities should be used only a fraction of the day, provided, of course, that the children receive during the day the required amount of academic work. In fact, it is difficult to see how the problem of providing enough classrooms, or playgrounds, or auditoriums for the mass of children is ever to be met if all children have to be in classrooms at the same time, and if all children have to play at once. Moreover, there seems to be no good reason from an educational standpoint why children should all have to do the same thing at the same time.

PRINCIPLE OF MULTIPLE USE MAKES MODERN EDUCATIONAL FACILITIES FINANCIALLY PRACTICABLE.

Fortunately, however, if the principle of multiple use is applied to public-school facilities, it is possible to provide not only adequate classroom accommodations but also auditoriums, gymnasiums, and shops for the mass of children. In fact, accommodations may be provided in all facilities, if they are in use constantly by alternating groups, at less cost than regular classrooms alone may be provided on the basis of a reserved seat for every child. For example, in a 24-class school, under the traditional plan, 24 classrooms are needed in addition to all the other special facilities. Under the work-study-play plan only 12 classrooms are needed. The classroom, however, is the most expensive unit in the school, therefore since only half the usual number of classrooms is needed, i. e., classrooms in a 24-class school, the cost of the remainder is released for all the other special facilities.

FLEXIBILITY OF THE PROGRAM.

A program based upon the multiple use of facilities not only makes possible modern educational advantages for the children but it also makes it possible to have a flexible program. A study of the different types of these schools in different parts of the country shows that it is possible for a community to adapt the program to its particular needs. For example, it is possible to arrange to have the school begin at 8.30, 8.45, or 9 a. m., or any other hour desired. Or, if the school begins at 8.30 and certain parents object to having their children leave for school so early, it is possible to put these children in the "B School," which begins the day with special activities; in this case the children can omit the play period from 8.30 to 9.20 and arrive at school at 9.20. Or again, many parents prefer to have their children take special music lessons after school. It often happens that home work or staying after school interferes with these lessons. Under the work-study-play plan it is possible to put such children in the "A School" and let them omit the play period or the auditorium in the afternoon from 2.40 to 3.30 p. m. There is, of course, no reason why children should not be given credit for these out-of-school activities if so desired. Again, a child who is backward in a special subject, such as arithmetic, and is being held back in a grade because he can not master that subject, can double up in arithmetic for a number of weeks by omitting the auditorium period until he has made up the work and is ready to go on with his grade. As for the special activities, each community and each section of the city can have the special facilities which the school authorities and parents desire.

THE SCHOOL TAKES OVER THE STREET TIME OF THE CHILD.

As has been pointed out, one of the most undesirable elements in the life of city children is the street life in which they have hitherto spent so large a part of their time. The average city school is in session about 180 days in the year. This means that even though all the children attended the entire time, they would still be out of school 185 days in the year. Obviously, because of the conditions of modern city life it is necessary that the school take over some of the time now spent by the child on the city streets, especially the school year. At present if 10 hours of the 24 are allowed for sleep, and 6 for meals and home duties, there still remains 8 hours to be accounted for. Even if the children were in school 5 hours every day there would still be 3 hours left, and as is well known these hours are spent on the city streets and not always to the child's advantage. At least one or two of these should be taken over by the school, and wholesome activity in work and play provided.

The work-study-play plan does this by lengthening the school day an hour or more as each community may desire, and by offering to the children the wholesome activity in shops and laboratories and on the playgrounds, which is so essential for them. It should be borne in mind, however, that this lengthening of the school day does not necessarily lengthen the number of teaching hours of any teacher. It is necessary that she be around the building six hours, but she need not teach more than five hours.

How this plan can be adapted to the school needs of Winchester will be explained in the discussion that follows.

A BUILDING PROGRAM.

Three alternative plans are offered in the following discussion. In all three plans the aim has been to give to all children, whether in elementary schools or junior high schools, modern school advantages—playgrounds, auditoriums, shops, and laboratories. The difference in the plans is that Plan I is based upon the erection of two combination elementary and junior high school buildings (west side and north end), and one 6-grade school (east side), Plan II is based upon the erection of one separate junior high school (west side) and one combination elementary and junior high school (north end) and two 6-grade schools (east and west sides); while Plan III is based upon the erection of one separate junior high school (west side) and three 6-grade schools (east side, west side, and north end). The cost of the buildings and the number of teachers required under each plan are given on the basis both of the work-study-play plan of organization and of the traditional plan of school organization.

PLAN I.

[Based on having two combination elementary and junior high schools.]

1. *West side.*—Erect a new school building on the west side. Make it a combination elementary and junior high school. House in it the pupils from Wyman, Prince, Mystic, the seventh and eighth grades from Wadleigh, and the children of the first year of high school who reside on the east and west sides, thus constituting the ninth grade of this junior high school. The enrollment would then be as follows:

	Pupils.
Wyman School	144
Prince (minus the seventh grade)	88
Mystic School	61
Seventh and eighth grades, Wadleigh and Prince	321
First grade in high school	123
Total (making 19 classes)	737

Make this a 24-class school, thus allowing for a growth of 5 classes or 200 pupils. Under the work-study-play plan the building would contain 12 classrooms and a kindergarten, an auditorium and gymnasium (and swimming pool, if desired), 2 shops for boys, 2 shops for girls, 2 science laboratories, 1 drawing room, 1 music room—21 units. At a cost of $16,000 per classroom unit, this would make $336,000. Under the traditional plan of school organization, 33 units would be needed, which would bring the cost to $528,000.

2. *North end.*—Erect a new building at the north end, to be a combination elementary and junior high school. The pupils from Washington, Chapin, and Rumford Schools should be housed in this building. The enrollment would then be as follows (not including seventh and eighth grade students who now go to Wadleigh and Prince. These pupils should be included in the number to attend the new school, but it was impossible to include them, as it was not possible to get the number in Wadleigh who came from the north end):

	Pupils.
Chapin School	220
Washington	117
Rumford	116
Total (making 12 classes)	453

Make this into an 18-class school, allowing for a growth of at least 6 classes. This would necessitate a building of 9 classrooms and 1 kindergarten, 1 shop for girls, 1 for boys, 1 science laboratory, 1 drawing room, 1 music room, an auditorium, and a gymnasium—15 units. This would cost approximately $240,000. Under the traditional type of school organization, 24 units would be needed, which would bring the cost to $384,000.

3. *East side.*—Consolidate Highland, Gifford, and the sixth grade in Wadleigh into a six-grade school on the east side. The enrollment would then be as follows:

	Pupils.
Wadleigh (sixth grade)	82
Highland	61
Gifford	132
Total (making 7 classes)	275

The enrollment in this school is not likely to increase, as it is in a part of the city that is not growing. This school could be made into an 8-class school. Wadleigh has 8 classrooms, 2 shops, and a room for play or for another shop in the basement. Four of the rooms could be used as classrooms, 1 as a nature-study room, 1 as a drawing and music room; 2 could be turned into an auditorium, and the attic could be made into a gymnasium, which, with the play space downstairs, could give enough indoor play space.' The outdoor playground space is too small, but it is large enough for one-sixth of the school to play in at one time, as would be necessary under the work-study-play plan.

As there is not enough space in the Wadleigh School for the kindergarten children, and as it is important to continue to use the Gifford School, it is suggested that two rooms in Gifford be used for the kindergarten, and the other two rooms for additional shops when considered desirable.

The cost of changes and additional equipment would approximate $5,000. Under the traditional plan of school organization, two units plus an auditorium and a gymnasium would be needed. This would necessitate using Gifford as an annex, or cutting out these activities. The cost of reconstruction in either school would be the same, $5,000. But the cost of overhead would be greater.

Summary of costs and capacity[1]*—Plan I.*

Buildings.	Under the work-study-play plan.			Under traditional plan of school organization.		
	Number of units.	Cost.	Classes provided for.	Number of units.	Cost.	Classes provided for.
1. New school buildings for 24 classes, on the west side	21	$336,000	24	33	$528,000	24
2. New school building at north end, for 18 classes	15	240,000	18	24	384,000	18
3. Reconstruction of Wadleigh	....	5,000	8	....	5,000	8
Total	36	581,000	50	57	917,000	50

[1] This does not include the cost of sites for (1) and (2).

PLAN II.

Among plans for building programs which have been suggested at various times for the Winchester schools, the proposal has been made that a separate building for the junior high school be erected. Plans II and III show how this can be done, first (Plan II) on the basis of having a separate junior high school for east and west side children, and a combination elementary and junior high school for the north end; and second (Plan III), on the basis of having one junior high school for all children in the city and three six-grade schools.

Plan II would then involve erecting the following buildings:

1. *West side.*—An elementary school to accommodate the elementary school pupils from Wyman, Mystic, and Prince (minus the seventh grade), 293 pupils, or 8 classes. A building should be erected to accommodate at least 10 classes, so as to allow for growth. This would mean a building, under the work-study-play plan, of 5 classrooms and a kindergarten, 4 special rooms, an auditorium, and a gymnasium, 10 units, $160,000. Under the traditional plan, 10 classrooms would be needed, making 14 units; cost, $240,000.

2. A junior high school on the west side to accommodate the seventh, eighth, and ninth grades from the east and west sides, 444 pupils, or 12 classes. It would be necessary to erect a building to accommodate at least 16 classes. This would require under the work-study-play plan, 8 classrooms and 8 special rooms, 16 units, $256,000. Under the traditional plan it would require 24 units, $384,000.

3. *North end.*—Erect a combination elementary and junior high school, as per Plan I.

4. *East side.*—Reconstruct Wadleigh into a six-grade school, as per Plan I.

The total cost of a building program under Plan II would be as follows:

Cost of building program on basis of one separate junior high school and one combination elementary and junior high school—Plan II.

Buildings.	Under the work-study-play plan.			Under the traditional plan.		
	Number of units.	Cost.	Number of classes.	Number of units.	Cost.	Number of classes.
1. New elementary school building, west side, 10 classes	10	$160,000	10	15	$240,000	10
2. Junior high school, west side, 14 classes	16	256,000	16	24	384,000	16
3. Combination elementary and junior high school building, north end, 18 classes	15	240,000	18	24	384,000	18
4. Reconstruction of Wadleigh	....	5,000	8	....	5,000	8
Total	41	661,000	52	63	1,013,000	52

PLAN III.

[Based on the plan of having one junior high school for all seventh, eighth, and ninth grade pupils, and three elementary school buildings, containing only grades 1 to 6, inclusive.]

1. Erect a 6-grade school on the west side, as per Plan I.

2. Erect a 6-grade school on the east side, as recommended in Plans I and II; cost, $5,000.

3. Erect a 6-grade school in the north end. Chapin, 220; Washington, 117; Rumford, 116; total, 453, or 12 classes. Make this into a 16-class school. This would necessitate having a building of 8 classrooms and a kindergarten, 1 shop for girls, 1 for boys, 1 nature-study room, 1 drawing room, 1 music room, an auditorium and gymnasium, 14 units. This would cost approximately $224,000. Under the traditional type of school organization 22 units would be needed, which would bring the cost to $352,000.

4. Erect a junior high school to accommodate all seventh, eighth, and ninth grades in the city.

It would then be necessary to erect a junior high school to accommodate 18 classes, thus allowing for a growth of 6 classes. This would require 9 classrooms and 8 special rooms, 17 units, $272,000. Under the traditional plan it would require 26 units, $416,000.

Summary of costs and capacity on basis of one junior high school and three six-grade schools—Plan III.

Buildings.	Under the work-study-play plan.			Under the traditional plan.		
	Number of units.	Cost.	Number of classes.	Number of units.	Cost.	Number of classes.
1. Six-grade school on the west side	10	$160,000	10	15	$240,000	10
2. Six-grade school on east side		5,000	8		5,000	8
3. Six-grade school at north end	16	224,000	16	22	352,000	16
4. Junior high school	17	272,000	18	26	416,000	18
Total	41	661,000	52	63	1,013,000	52

COMPARISON OF COSTS UNDER THE THREE PLANS.

It will be seen from the foregoing that under the work-study-play plan, Plan I would cost $581,000, as against $661,000 under Plan II or III, a difference of $80,000. Under the traditional type of school organization Plan I would cost $917,000, as against $1,013,000 under Plan II or III, a difference of $96,000.

Plans II and III cost the same, the difference being that the junior high school under Plan III would be larger and the six-grade school at the north end smaller than under Plan II.

Let us now consider the number of teachers required under these plans.

NUMBER OF TEACHERS REQUIRED.

According to the 1919 annual school report of Winchester, there were 33 teachers in the elementary school and 9 principals, total 42; in the high school, 19 teachers and 1 principal; and in addition, 3 special teachers, making a grand total in the teaching force of 65.

In the building program as suggested the number of elementary teachers required on the basis of the present number of classes would be as follows: In Plan I, under the work-study-play plan, 47 teachers, or 5 more than at present employed. Under the traditional plan, 57 teachers, or 15 more than at present employed.

In Plans II and III under the work-study-play plan, 54 teachers would be needed, *i. e.*, 12 more than are now employed; under the traditional plan 58, or 16 more than at present employed. (See following table.)

Furthermore, it should be noted that not only are more teachers needed under the traditional plan, but even under such circumstances special teachers of drawing, music, nature study, auditorium, and play are not included. If these special teachers were included, as they are in the estimate under the work-study-play plan, it would bring the number of teachers under Plan I to 65 and Plan II to 74, as contrasted with 47 and 54, respectively, under the work-study-play plan. (See following table.)

Teachers required under the work-study-play organization—Plan I.

Schools.	Regular teachers.	Special teachers.	Teachers of auditorium.	Teachers of play.	Total.
1. Elementary and junior high school, west side	10	8	2	2	22
2. Elementary and junior high school, north end	6	4	1	1	12
3. Highland, Gifford, etc., 6-grade school	4	4	1	1	10
Teachers required					44
Principals required					3
Total teaching force required					47

This is five more teachers than there are at present in the elementary-school force. It should be remembered that the plan contemplates putting the present first-year high school into the junior high school as the ninth grade, 123 pupils, or 3 classes; therefore some teachers could doubtless be transferred from the high school to make up this deficit.

Teachers required under the work-study-play organization—Plans II and III.

Schools.	Regular teachers.	Special teachers.	Teachers of auditorium.	Teachers of play.	Total.
1. Elementary school, west side	4	4	1	1	10
2. Junior high school	6	8	2	2	18
3. Elementary and junior high school, north end	6	4	1	1	12
4. Highland, etc	4	4	1	1	10
Teachers required					50
Principals required					4
Total required on basis of separate junior high school					54

Teachers required under the traditional organization—Plan I.

Schools.	Regular teachers.	Special teachers.[1]	Auditorium teachers.	Play teachers.	Total.
1. Elementary and junior high school, west side	20	8			28
2. Elementary and junior high school, north side	12	4			16
3. Highland and Gifford, sixth-grade school	8	2			10
Teachers required					54
Principals required					3
Total teaching force					57

[1] This does not include special teachers of drawing, music, nature study, auditorium, and play.

Teachers required under the traditional organization—Plans II and III.

Schools.	Regular teachers.	Special teachers.[1]	Auditorium teachers.	Play teachers.	Total.
1. Elementary school, west side	8	2	....	....	[illegible]
2. Junior high school, west side	12	8	....	....	[illegible]
3. Elementary and junior high school, north end	12	2	....	....	[illegible]
4. Highland, etc.	8	2	....	....	[illegible]
Teachers required	....	....	....	....	[illegible]
Principals required	....	....	....	....	[illegible]
Total teaching force	....	....	....	....	[illegible]

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[1] This does not include special teachers of drawing, music, nature study, auditorium, and play.

If an average salary of $1,200 is allowed for these teachers, the cost of the different plans in terms of additional teachers can be stated as follows (see following table):

Plan I would require under the work-study-play plan five extra teachers, at a cost of $6,000.

Plan I would require under the traditional plan 15 extra teachers, at a cost of $18,000.

Plans II and III would require under the work-study-play plan 12 extra teachers, at a cost of $14,400.

Plans II and III would require under the traditional plan 16 extra teachers, at a cost of $19,200.

Number of teachers required and estimate of cost of increase under work-study-play plan and under traditional plan of school organization.

Plans.	Under work-study-play plan.			Under traditional plan.					
				Minus special teachers of auditorium, play, music, drawing, nature study.			With special teachers.		
	Teachers.	Increase over present number.	Cost at average salary of $1,200 per year per teacher.	Teachers.	Increase over present number of teachers.	Cost at average salary of $1,200 per teacher.	Teachers.	Increase.	Cost.
Plan I	47	5	$6,000	57	15	$18,000	65	23	$27,600
Plans II and III	54	12	14,400	58	16	19,200	74	32	38,400

CONCLUSION.

It is obvious from the foregoing that Plan I (providing for two combination elementary and junior high schools) under the work-study-play plan of school organization is the most economical plan, both with regard to initial costs and number of teachers required; but any one of the three plans under the work-study-play plan is more economical than any under the traditional type of school organization. For example, the highest cost for building under the work-study-play plan is $661,000, while the lowest cost under the traditional plan is $917,000.

Moreover, in regard to teachers, Plan I would require, under the work-study-play plan 5 extra teachers; under the traditional plan, 15 extra teachers. Plan II or III would require under the work-study-play plan 12 extra teachers, while under the traditional plan it would require 16.

ECONOMY NOT THE MOST IMPORTANT CONSIDERATION.

However, economy is not the most important consideration. The essential point is that all the children in Winchester's schools should have the best modern school equipment in the way of playgrounds, auditoriums, laboratories, shops, and drawing rooms, *and the opportunity to use them.* The chief drawback to the traditional type of school organization is not that it is more expensive than the work-study-play plan, but rather that, even when shops and playgrounds and laboratories are provided in the traditional school, the program is so inflexible that it is impossible for all the children to get the opportunity for work and play in the shops and playgrounds every day. It is impossible to give every child in school a well-balanced program of work and study and play every day unless the principle of multiple use of facilities is applied to children's activities as it is to the activities of adults.

Chapter III.

THE WORK IN THE KINDERGARTEN AND THE PRIMARY GRADES.

CONTENTS.—1. In the kindergartens; retardation reduced; an introduction to organized education; habit formation; oral conversations; methods employed; need of purposeful work; how to realize important aims; equipment; relation between kindergarten and first grade; recommendations. 2. In the primary grades; a morning in first grade; oral language; preparation needed by teacher; music; phonics; gymnastic exercises; arithmetic; reading; overcrowded program; housekeeping in first grade; a rainy day in second and third grades; gardening; conclusions.

1. IN THE KINDERGARTENS.

There are five elementary schools in Winchester, only two having kindergartens. While 80 children receive one extra year's instruction in these kindergartens, approximately 120 children are denied this privilege. If kindergarten training has value, it should be available to all the children of suitable age; if the kindergarten has no place in public-school education, the taxpayer should not be asked to support it. That the parents of Winchester consider kindergarten training of value, and that they would send their children to the kindergarten if there were a sufficient number of them, is evidenced by the fact that children from cultured homes ride on the street car in order to attend one kindergarten while children from the poorer part of the city walk over a mile to attend the other kindergarten. This suggests the fact that the kindergarten appeals to all classes of children. It does not exist for either extreme of society. In many progressive school systems it has been incorporated as an integral part of public education.

The inclusion of the kindergarten in systems of public education is based on the modern conception that education is a process of development rather than a system of mechanical training. The impulses, instincts, and interests of the young child form the basis of the course of study in the kindergarten rather than instruction from books which comes later in his school life. Ideas are necessary to understand books; ideas are gained through the senses, our first teachers. The child gains skill with his hands by learning to use many kinds of material. His ear is trained through songs and response to the piano in games and rhythmic activities. By means of stories and oral conversation he enlarges his stock of ideas and increases his vocabulary; and in all these kindergarten activities he is gaining power of attention, habits of obedience, practice in expression, and ability to work in a group. Through walks and excursions, through pictures, stories, songs, and games his imagination is quickened and his eyes are opened to the world about him. These interests and habits and skills are basic in all school work, and thus the kindergarten forms the transition from the home to the organized work of the school.

THE KINDERGARTEN REDUCES RETARDATION.

The highest percentage of retardation is in the first grade in schools all over the country. The natural inference is that children in the first grade have been placed too quickly in a highly organized situation. In Buffalo, N. Y., so many children had to repeat the work of the first grade that it was found necessary to remedy this condition, and, as a result, kindergartens were opened in all elementary schools.

A study of the effect of the kindergarten in lessening the number of repeaters was made by a committee, appointed in 1915, of the superintendents and school boards branch of the Michigan State Teachers' Association, reported by Berry. In 19 towns without a kindergarten the percentage of repeaters, all grades considered, was 28.7 per cent greater than in the 75 towns having kindergartens; while in the first grade, taken by itself, the table shows that the percentage of repeaters in the towns having no kindergartens exceeded the towns having the kindergarten by 69.5 per cent.

A study of the question, Does the kindergarten tend to prevent retardation? was made in each of two schools of Louisville, Ky.,[1] in which there have been kindergartens for a period of years long enough to test the progress of the child from the kindergarten through the eighth grade. These studies involved an examination of the records of 959 children and lead to the following conclusions:

That the kindergarten tends to prevent retardation, that the kindergarten child is less liable to fail, and that kindergarten training is equal on the average to a gain of four or five months of school life.

THE KINDERGARTEN AS AN INTRODUCTION TO ORGANIZED EDUCATION.

While the kindergarten helps to solve the problem of retardation, this is not the primary reason for making it a part of every school system; there are values which do not lend themselves to statistical formulation. The kindergarten is concerned with the spirit and content of education, and its object is to help the child live his life to the full in the earlier stages of development, which are recognized as important years of the child's life. The way a child begins school is of great significance, and the kindergarten has proved its value as the introduction to organized education.

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[1] An. rep., board of educ., Louisville, Ky., 1916–17.

How do the kindergartens of Winchester measure up in giving children a basis for more organized work?

The problems of the two kindergarten teachers presented a distinct contrast, because of the different types of homes from which the children came. In this report Kindergarten A will be used to designate the kindergarten where the children come from homes where there is a background of American culture. In Kindergarten B many of the children are from foreign homes, where opportunities for American culture are more limited.

HABIT FORMATION IN THE WINCHESTER KINDERGARTENS.

Habit formation is a necessary part of the educational process. The child's education begins long before he enters school. The kindergarten builds upon the habits that have been formed in the homes and supplements home training. The personal habits of the children in the kindergartens of Winchester were well established, and the kindergarten teachers were alert to this aspect of training. The kindergarten housekeeping was excellent; the children were neat and clean. Individual children were reminded to place the hand over the mouth and turn aside the head when coughing. There was a supply of clean handkerchiefs in Kindergarten B, where the children came from the type of home that does not always supply this needed article. The teachers were careful to see that the children were seated in chairs where their feet touched the floor, and a full half hour was spent out of doors in supervised play in addition to walks and excursions.

Habits of courtesy were encouraged. One child noticed that another's shoe string was untied, and offered to tie it and did it very skillfully. One child was rebuked for shaking his head in assent to the teacher's question, and all the children were reminded of the courteous form of assent and dissent and the use of the right hand in shaking hands in greeting. One little child was corrected for carelessly tearing his paper napkin at luncheon.

The informality of the life in the kindergarten gives rise to situations through which the children learn social behavior. The children were playing "Musical Chairs," each child finding a chair when the music stopped. The children became so interested in the game that they scrambled over the backs of the chairs, instead of marching around them. The "rules of the game" were then worked out by teacher and children, and followed faithfully. At another time in the morning some of the children wished to play one game, while a second group was just as emphatic in wishing to play another. The teacher did not make the decision, but the children were allowed to vote, and the minority cheerfully yielded to the will of the majority. In these ways the children were helping to work out the problem of government in a group, and were learning the necessity for rules, instead of following blindly an imposed procedure.

In both kindergartens there was a spirit of cheerful obedience. Directions were given in an informal manner, and the children in general gave good attention. When one teacher wished to divide the group into a new formation, she called 12 or 14 names in quick succession. The children had the power to wait until she had finished, and then those whose names had been called passed quickly to another part of the room. There was no elaborate marching with chairs to music from circles to tables. Neither were the children dependent on the piano for signals, which sometimes makes kindergarten children unable to respond to oral directions when they pass on into the primary room.

On one occasion the children talked too freely when they should have been ready for work. It was the teacher's skillful handling of the situation that secured attention, instead of a realization on the children's part that a work period was beginning. Even little children can develop habits of self-control, and there is often danger that children shall be dependent upon the ingenious devices of one type of teacher or upon the mechanical régime of the formal type of teacher, instead of acquiring a body of habits which are the basis for self-control and which may be carried with them through life.

SUBJECT MATTER OF ORAL CONVERSATIONS.

The subject matter in the oral conversation periods in both kindergartens was chiefly about birds and flowers. All subject matter should grow out of the immediate interests of the children. It was natural that in the late spring and in a suburban community like Winchester nature material should have been selected. In both kindergartens the children had been out walking, and actual experiences were the basis for the conversation.

In Kindergarten A the children gave evidence of an appreciation of bird life by freely giving suggestions of their own. The song, "Pretty little bluebird," drew forth the question from one child, "Why can't we play it?" and as the child asked the question her arms began to sway unconsciously. She was chosen for the bluebird, and David said, "We'll sing the first part, because we're sitting in our chairs." So the children sang to the bluebird, and the little arms that had been swaying unconsciously as an expression of the child's real dramatic feeling moved freely with the rhythm of the swiftly running feet as the child threw herself into the joyous activity.

The song of the bluebird suggested to one child Stevenson's verse, "Birdie with a yellow bill." The children said the verse with evident appreciation of the forbidden "ain't" in the last line. One little child remarked, "He said 'ain't.'" The teacher said, "Yes; the little bird didn't know how to talk, but what would we say?" And the children said in an assured tone, "Aren't." This teacher did not destroy the playful quality of the Stevenson verse by changing it to a grammatical form, but when the question of technical grammar did come up she handled it with the true art of teaching, through interpreting the spirit of the poem.

The next day one of the children brought his Stevenson's Child Garden of Verses to school, and the teacher read the children some of the poems, and they found the one that said "A birdie with a yellow bill." They showed other poems, saying, "This is about the wind"; and another child said "Way over here it tells about 'The little shadow.'" This is the very best preparation for first-grade reading. The stories and poems that the children become familiar with in the kindergarten through oral language are seen by them in another form on the printed page, and they become interested in the symbols that say these same words that they know and love so well.

These two instances of the dramatization of the song of the bluebird and the interpretation of the Stevenson poem illustrate the fact that these children, with a background of homes with books and mothers who tell stories and say poems, really appreciate the subject matter of the kindergarten.

They were constantly giving suggestion that enriched the program. One child introduced a garden game which he had learned in Sunday school, and he showed power of organization in choosing the children to play the game and in showing them how to play it. He gave directions freely to teacher and children alike. For example (to teacher), "You play the piano; that's the way to make the sun and rain." (To children, who were seeds) "Don't grow up so fast; seeds don't grow that way!"

These children brought material from home, besides picture books. One child brought a clock face with hands that could be made to point to the different hours. At the beginning of the morning circle this clock face had been placed with other treasures in the middle of the ring, until the time should come to share with all the children what each child had brought from home. Nothing had been said about the clock, but when 9.30 came, one little child slipped quickly into the center of the ring and made the hands point to the same hour as the real clock and said, "It's half past nine!" Telling time was then made the basis of discussion, and many children were able to find the hours and half hours. Another child had brought an alphabet game, and the children were interested in spelling their names. These are but instances that show what a wealth of material the children have in their lives outside of the school. The skillful use made of this material by the teacher, and the fact that the children brought so much to school from their life outside of school, show that there was that real relationship between education and life that is advocated in the modern school.

The background of the children in Kindergarten B presented a sharp contrast. Many of these little children come from homes where they have heard little or no English. Some of them probably never saw a picture book until they came to the kindergarten. They have had little experience in handling different kinds of materials and learning how to express their play purposes as a result of free experiment. The difference in the environment of these children requires a very different kind of program. The great need of these little children is the mastery of a speaking vocabulary of English words that will be useful to them in their contact with people and which will furnish a basis for a vocabulary for the reading of the first grade.

Some of the games observed in Kindergarten B showed a conscious effort on the part of the teacher to enlarge the English vocabulary of these children. In the sense games they were learning such words as bean bag, eraser, rope, paint, dish, apple, and ball; and one game was played with a great deal of spirit where the teacher gave an oral direction, such as "All hands on shoulders!" The teacher always put her hands in a different place from the command given the children, so that the children had to act on the command and not by imitation.

The conversation periods would have been more effective if the children had been divided into small groups on the basis of language ability. This suggestion applies not only to the work with foreign children, but also to kindergartens where there is a large range in the maturity of the children. Breaking the entire number up into small groups for oral conversation enables all the children to take part, which is not possible in the large kindergarten circle. The children could be divided into three groups, one in charge of the kindergarten teacher, another group in charge of the kindergarten assistant, and a third group working independently with kindergarten materials.

The ability to work alone without disturbing the groups of children who are engaged in oral conversation is a valuable habit for children to form in the kindergarten. When children in the kindergarten never take part in any activity that is not directed by the teacher they find it difficult to do independent work in the first grade.

The children in kindergarten B gave evidence of having learned English through informal talk in the kindergarten. One little boy, who had not been able to speak a word of English in September, told the observer about his new shoes, of which he was very proud. He said that his father worked in East Boston and that he had bought these new shoes there. In this school the primary teacher spoke with warm appreciation of the help the kindergarten had been in teaching the children English.

In both kindergartens the children sang with evident pleasure, but it might have been wiser to have had fewer and shorter songs in kindergarten B. Recent books on kindergarten music have emphasized the value of the two-line song. Children should do a great deal of individual singing in the kindergarten and first grade. Only in this way can children become independent in learning melody and rhyme. A mastery of the words of the songs would be a great aid in learning to speak English.

Not only should the songs have been simpler, but it would have been better to have had fewer periods during the morning and to have had the work and play more related. In this way the same ideas and the words which are the symbols of those ideas would have been used many times and so would have become familiar to the children.

In one of the table periods a May basket was made by all the children, but it was an exercise with little or no relation to the celebration of May day. The main emphasis for the day might well have been placed upon the making of baskets for the celebration of May day, which fell on Saturday, the next day.

In both kindergartens the subject matter was not worked out in a vital way through the materials. This point will be discussed under "Methods employed."

METHODS EMPLOYED.

Within the past 10 or 15 years there has been a decided modification of theory and practice in both the kindergarten and the elementary school. The present-day conception that the period from 4 to 8 years in a child's life is psychologically one period makes pertinent the criticism of traditional practice in both kindergarten and primary. Child-study has shown much of the old-time practice in relation to the rigid time schedule to have been opposed to the way a little child actually works and plays. A little child does not hold his interests within 15-minute periods or half-hour periods. Absorption in work is one of the best habits that can be encouraged, and recent kindergarten studies show that a child's span of interest increases steadily through one or two years as he works with kindergarten materials.

Kindergarten work lends itself more readily to a flexible time schedule than does primary work, because of the organization into classes made necessary by the introduction of reading, but in both the kindergarten and the primary there should be work periods where the children are given time to experiment with materials and to work out projects related to subject matter. As their ability to use materials and to work out problems increases, the projects will carry over from day to day. Too much of the handwork in both the kindergarten and primary school has been in the nature of devices planned by the teacher to keep the children busy and carried out by the children with no demand being made upon their intelligence.

The time schedule in the Winchester kindergartens was in the main broken up into the customary half-hour periods, beginning with the morning circle. Each period was practically complete in itself, with apparently no work carried over from day to day. In many modern kindergartens the children begin their work immediately when they enter in the morning, so the first period is a working period, and the conversation period comes later in the morning. The advantages of beginning the day with a work period is that the children do not have to wait for formal opening exercises. If they have come from home with a fresh idea that they wish to carry out with the kindergarten materials, they may begin to work immediately, without waiting for the kindergarten to assemble. For immature children and foreign children, expressing ideas through concrete materials is a more natural form of activity than is offered by the large conversation group of the conventional kindergarten where only a few children have opportunity to participate.

In Kindergarten B, where the children had little material to work with at home, and where there was a large range in maturity and in English-speaking ability, it is doubtful whether the large kindergarten circle was as good a beginning for the morning as a period in which the children chose their own material and worked in small groups. As far as the observer could judge, the children were given no choice of material, and, although the large group differed so widely in ability, a uniform result, the carrying out of the teacher's idea, was the basis for each lesson.

The children in Kindergarten A were able to gain a great deal through the interchange of ideas in the morning circle. However. the practices of the conventional type of morning circle were held to, in having the children listen to "quiet music" at the beginning of the morning when they have become interested, because of the empty chairs in the circle, in naming all the children who were absent because it was a rainy day. If the children had been allowed to recall all the names of the absent children, it would have been a good memory exercise and at the same time a recognition of the social aspect of the kindergarten group. The teacher remarked, "There are so many away to-day, let's not take time to say all their names," and then the children had to listen to "quiet music," which occupied the same amount of time as would have been required in recalling the children's names. While the children sat passive in their chairs, it is doubtful whether they gained anything from this exercise, either in the way of music appreciation or as a soothing experience, for it was too early in the day for them to need this kind of specific.

But the rest of the morning circle was filled with interesting conversation, skillfully directed by the teacher. The children contributed freely, and the teacher made wise use of the children's suggestions. The teacher knew when to lead and when to remain in the background.

While there was no formal dictation in the use of the kindergarten materials, the method of obtaining results in all the lessons observed was too largely suggested by the teacher. For example, in building with the "sixth gift" the teacher began the lesson by telling the children to take two bricks and two square blocks and make a window. Then, the children were told to make a number of units like the first and put them together. The children named the results after the units had been combined. "Subway," "Candlesticks to light the big country," etc., were some of the names given the buildings. The results were varied and interesting as results, but the forms obtained were quite accidental. The children had not worked along the line of their own mode of activity for a result which was to them worth while. A better method of using materials is for the children to experiment freely with material first, discovering what can be done with it. Problems arise through the use of material which demand thought on the part of the child. After individual experiment, the child may join a small group on a larger project or the teacher may relate his isolated result to a larger whole. For example, one child may be making a boat and another may be making a train. Building a dock for the boat and running train tracks out on the dock so that freight may be transported gives the child a more complete idea of transportation and also enables the child to relate his ideas to the ideas of the group.

NEED OF PURPOSEFUL WORK.

The great value in using materials for expression is in thinking one's way through to a result that is satisfactory. On the previous day, when there was a small group because of the weather, the teacher had given the children free experiment with the material. In the main, the activity of the children seemed to lack purpose. M——— built rather an indefinite kind of a building which he first called a hotel, then with few changes he named it a battleship; but soon the erstwhile ship had assumed an ecclesiastical appearance and masts had changed into crosses. When children first come to the kindergarten it is natural that they should be more conscious of the suggestibility of the material than of any fixed idea which is to be expressed. But these children were mature and they were within two months of the end of the year. If M———, who made the hotel-battleship-church combination, had, through the stimulus of the teacher and the other children, worked through that first stage to participation in a group project, the idea would have demanded intelligence in his building. For example, if a group of children were making a community, and M——— had been chosen to make the hotel on a street where there were other houses, his battleship would not have been accepted by the other children. If the church had appeared, another child who had chosen to make the church would have called out, "I'm making the church; you're making the hotel."

The conditions in this kindergarten were most favorable for carrying out large units of work, as there was a workroom in addition to the room for the games and circle periods. This type of work would have made a demand upon the intelligence of these children and would have related technic to the accomplishment of a definite purpose rather than making it an end in itself.

In Kindergarten B the making of the May basket provided a real motive for the work of the children. But as has been said, the purpose was not made clear to these little children, nor was any originality nor art expression on the part of the children carried out in the making of the baskets. The children were shown how to make the 16-square box form and a handle was added. The basket was then decorated with colored parquetry. The children worked in a large group, and the process of making the basket was too difficult for many of them.

HOW TO REALIZE IMPORTANT AIMS.

It has been suggested (1) that in the kindergartens there was not enough relationship between the subject matter of the conversation periods and the manual activities; (2) that there was too little original expression directed toward a child-like result in the handwork. Taking the situation of preparation for May Day for illustration, how could these two aims in teaching have been realized?

In the traditional kindergarten, subject matter was organized in weekly topics, and topics for the day. But as has been previously suggested, children must grow into the full realization of an idea. The potentiality of May Day had begun with the celebration of Easter, the beginning of new life in the spring time. The children had become more and more conscious of the coming of spring on their walks and excursions, where they had seen the grass growing green, the return of the birds, and the blooming of the spring flowers. Now, a day is coming when the charming old custom is to be revived of hanging the May basket on the door of a friend. A basket must be made for this purpose.

Just as the children have had the experiences of the spring walks as a basis for special emphasis on flowers at May Day, so should they have had a basis for making baskets through previous experiment with paper construction. Children invent many simple forms of baskets in kindergartens where invention is encouraged. In Kindergarten B, when the teacher gave the suggestion of making a basket, one child began to paste two corners together to make his own kind of basket, but as a uniform result was the object of the lesson, the experimentation was not recognized. A number of days before the making of the May basket, the children should have been told of the coming of May Day. Through picture and dramatization they would have received the idea of hanging the pretty flower-filled basket on the door knob and running away before they were discovered. Then they would experiment consciously to make a May basket to hold flowers. They could decorate it with colored crayons, and if the teacher wished to improve the form or decoration she would give suggestions in relation to what the children had already made, seeking to preserve the individual expression of the children, both in decoration and in the form of the basket. The final May baskets completed, they should be filled with flowers. If there were no wild flowers that the children could have gathered, they might have collected leaves and grasses, and the teachers could have seen that on that day the kindergarten was supplied with the flowers. The children would then have had the joy and satisfaction of taking home the little flower-filled basket.

The dramatization of hanging the basket on the door and running away would make a game that would hold the children's interest for a number of days. Through the repetition of this experience the foreign children would be learning such words as mother—basket—run—away—hang—door—flowers—May Day, etc. This is but an illustration of the way a simple vocabulary might be built up through the repetition, in small groups, of exercises that relate to the subject matter of the kindergarten. If a record were kept of the English vocabulary of the children who were to be promoted next term, pictures and objects could be used to supplement the kindergarten situations in giving the children a command of English.

The suggestions that have been given relate entirely to the academic aspect of school work. One very important phase of kindergarten work, the visiting in the homes of the children, has not been mentioned. Both kindergarten teachers were doing valuable work along this line. The work which was being done among the foreign women was particularly effective in matters of hygiene.

KINDERGARTEN EQUIPMENT.

The kindergartens in Winchester are well supplied with Froebelian materials. The furniture and equipment necessary to carry on the activities of the modern kindergarten are lacking. Small tables that seat two or three children, low cupboards where the children keep their materials and to which they have free access, a playhouse consisting of a screen with windows and a hinged door, dolls, doll furniture, toy utensils, toy animals, and large floor blocks, provide for the type of work where children (1) work in small groups, (2) initiate their own projects, (3) reproduce the life of society through their plays of family and community life.

Many modern kindergartens have some playground apparatus in the kindergarten room. The type most commonly used is a slide and a bar which slips into a socket in the doorway, and can be removed when the door is being used. The advantage of having this kind of apparatus in the kindergarten room is that children may find relief from the finer type of work by exercising the larger muscles through vigorous activity. It is more valuable to carry on such exercise out-of-doors, but the advantage of having some play apparatus indoors is that it is always accessible to the children. In the right type of school building there should be a well-equipped playroom for the use of the kindergarten and also for the first and second grades.

Every playground should be equipped with swings, seesaws, slides, horizontal pole bars, walking boards, and sand boxes. The school yards in Winchester were totally lacking in playground equipment. As has been said, the kindergarten teachers were very conscientious about keeping the children out of doors for a full half hour, in addition to walks and excursions, but the need for play apparatus was very apparent. In Kindergarten A the children swung upon a hand-railing by the steps until driven off by the vigilant janitor. A group of them played on a wooden door over an area way, playing boat and train interchangeably, and calling out, "All aboard for Atlantic City!" "All aboard for the State of Washington!" "Fifty miles from Providence to Winchester." The play of many of the children, however, tended to be aimless or boisterous. This was natural, because organized ring games are usually artificial out of doors, and children need apparatus for vigorous play. "Taking turns" is also fine social training.

In Kindergarten B the situation was much worse. These little children needed a well-equipped playground much more than the children of the other kindergarten. They had nothing but a cinder-covered yard and some empty iron frames for swings to greet them when they went out to play in the open. One little Italian "Ty Cobb" picked up a piece of wood and produced a marble from his pocket and tried to start a miniature baseball game. But by this time the kindergarten teacher had organized a circle game, and the baseball player rather reluctantly joined the circle. Two large basket balls, some horse reins, and bean bags would have helped the situation.

The care of living things is one of the most valuable experiences a child can have and is the best kind of nature study. There are no gardens for the kindergarten children in Winchester, although there is plenty of space in the school yards. In Kindergarten A the teacher was preparing to have the children plant in individual flower pots. Children of kindergarten age can only do the simplest kind of gardening, so planting in window boxes and flower pots should always supplement the work in the garden out of doors. But while the care of the school garden during the summer months presents difficulties, there are quickly maturing flowers and vegetables, such as nasturtiums, radishes, and lettuce, which may be gathered before the close of school.

No pets were observed in the kindergarten or first grade. Goldfish and canary birds, and in the spring rabbits and chickens, are pets that may be cared for by the children.

THE RELATION BETWEEN THE KINDERGARTEN AND THE FIRST GRADE.

In most cities where kindergartens have been included in the public-school system it has been recognized that there is a break between the kindergarten and the first grade. No external means, such as creating another grade called "a connecting class," has ever solved this problem. The only solution is a course of study that is based upon the instincts and interests of young children rather than upon the teaching of the formal aspect of school subjects. As has been previously stated, methods and equipment of both the kindergarten and the primary school have been profoundly modified by child study. In some cities supervision of both the kindergarten and the primary by an expert who has had equal experience in the kindergarten and primary grades is bringing about a continuity of development in the school life of the child that has never existed before.

Training students in normal schools for both kindergarten and primary work, so that the kindergarten teacher will know primary work and the primary teacher will understand kindergarten work, is also bringing about the right relationship between these grades. In Denver, Colo., and in Trenton, N. J., teachers alternate teaching in kindergarten and first grade. In a number of cities, among which may be mentioned Kansas City, Mo., Louisville, Ky., and Trenton, N. J., kindergarten-primary supervision has brought about a type of kindergarten and primary work within public-school systems which is as progressive as the work in some of the private experimental schools in the country.

While this survey of the Winchester kindergartens has shown that in some respects the methods and equipment are of the traditional type, nevertheless it also shows that they are not without freedom and joy and childlike expression. Lack of adequate equipment and the somewhat formal and mechanical character of the work of primary grades operate to make difficult the close adjustment of kindergarten and primary work. In the case of the children in Kindergarten A the situation is even more difficult, because there is no first grade in the building; consequently the children have to carry on their school life in other buildings after they leave the kindergarten.

A better adjustment between the kindergarten and the first grade would be possible if the children were promoted twice a year instead of once a year, as is now the custom. If children are promoted only once a year, there is a tendency either to place immature children in the first grade or to keep them in the kindergarten until they are too advanced for kindergarten work. This is the case in Winchester, where children of 5½ years are permitted to enter the first grade, while children who are only a month younger have to remain in the kindergarten until they are over 6. It would be an advantage if children were privileged to enter the kindergartens at 4 years of age for two years of kindergarten training, thus entering the first grade at the age of 6. However, there should be such a close relationship between the kindergarten and the primary school that children may not be compelled to remain in the kindergarten until the time of the half yearly promotions. They should be promoted when they give evidence of capability to do more advanced work.

All these problems suggest the need for a kindergarten-primary supervisor. The kindergartens should not be supervised by one who has not had kindergarten training. It will be difficult, however, to secure a supervisor who has had experience from the kindergarten to the sixth grade, inclusive. This difficulty might be solved by having an experienced kindergarten teacher give part of her time to kindergarten supervision. The assistant teacher in this kindergarten might carry on the work with the help of a substitute for one day a week in the kindergarten supervisor's absence. Conferences between the kindergarten supervisor and the primary supervisor and conferences with the groups of kindergarten and first-grade teachers would be necessary to unify the work. The kindergarten teacher should visit the primary room and the primary teacher visit the kindergarten room in each building, and frequent conferences should be the result of this interchange of visits.

The supervision of the kindergarten by a special supervisor does not tend to isolate the kindergarten, if the same educational principles prevail in the kindergarten and primary grades.

RECOMMENDATIONS.

1. There should be a closer relationship between subject matter and the expression of ideas through manual activities. There should be simplification of subject matter, and the curriculum should be developed in larger units.
2. The children should be divided into smaller groups in conversation periods. The formation of the groups should be based upon maturity and language ability.
3. There should be periods when the children are given free choice of materials, and they should be encouraged to develop purposeful activity out of their free experimentation.
4. Small tables, 20 by 36 inches, and low cupboards with a space for each child to keep his own work should be provided.
5. Toys and large floor blocks should be provided, in addition to the regular kindergarten materials.
6. The playgrounds should be equipped with play apparatus, and provision should be made for gardens and pets.
7. The teacher of special subjects should consult with the kindergarten teacher before giving a lesson to the children. The type of lesson and the methods used should be in keeping with the best kindergarten practice.
8. The application of modern principles of education in both kindergarten and first grade would bring about a better coordination between these two grades than now exists. There should be a more flexible system of promotion from kindergarten to first grade.
9. A kindergarten should be established for children from 4 to 6 years of age in every school having a first grade.
10. A supervisor should be appointed who has had both kindergarten and primary training and experience. If this is not practicable, an experienced kindergarten teacher should be detailed to give one day a week to supervising the kindergartens in addition to teaching her own kindergarten.
11. There should be frequent visits and conferences between the kindergarten and first-grade teachers in each building and general

conferences with the kindergarten supervisor and the primary supervisor to integrate the work of these two grades.

2. IN THE PRIMARY GRADES.

A survey of the schoolroom practice in the primary grades of the Winchester schools resolves itself into a report of individual teachers in those grades. There is little unity of method and coordination of subject matter among the same grades in different schools, so far as observation would indicate, except as some special subject like art or music is supervised by a director. Each teacher seems to be a law unto herself, and while this usage may develop individuality among the teaching force, it often tends to fix personal peculiarities in a teacher which eventually become a detriment to the work. The course of study is apt to become disorganized and disjointed when aims and minimum essentials for each grade in all the schools are not similar. The relationship of subject matter to special environment is, of course, a different question and might well be an individual problem in so far as its application to different localities and types of children is concerned. Even here the fundamentals should remain the same and something of uniformity of method should obtain.

Therefore, as the schoolroom practice is so widely divergent, ranging from a mechanical to a high type of artistic procedure, this report must necessarily deal largely with individual cases which may be considered fairly representative, and which may be presented as a series of pen pictures illustrative of the work of the school.

In passing, it should be said that supervision is one of the essentials of a well-organized school system. This may be one of many types. It may take the form of a committee chosen from the teaching force. In this case it should become a court of appeal wherein a vexing question may be solved which is perplexing any primary teacher. It should build up a standard for each grade in the different subjects of study, reading, writing, spelling, and arithmetic, both as regards curriculum and standards of teaching. It should become a bureau of research and an authority on the best current practice in these subjects. It is understood, however, that this plan is at best a makeshift for a trained and efficient primary supervisor—one who has spent many years in a study of the best ways to teach the children in these grades, and who knows from a rich experience just what and how much it is best to attempt in this early work in education.

A MORNING IN THE FIRST GRADE.

Every condition that might favor the best effort of teacher and pupil obtained in this room—a small class of bright well-nurtured children, a clean sunny room, a cultured intelligent teacher with funds at her disposal for books and equipment to any amount that she might designate. Here one would expect to find a high order of modern schoolroom practice.

Such an environment fosters freedom from the traditional restraints which are usually upon children in less-favored communities. Small classes provide for individual instruction. They presuppose a higher average attainment. Drills are less essential and time may be devoted to enrichment of subject matter. Time for stories is conserved for dramatization and for other modes of reproduction which help to fix ideas and which train in self-expression. Daily programs may be varied and routines avoided. Field lessons without and experiments within the schoolroom, bird lore and forest lore, house making and keeping, gardening, selling and buying, with barter and exchange of garden products—these are some of the activities made possible in such a school as this.

Books of many kinds one should find here; books for tiny children still reading from pictures and too little yet for texts; shelves of children's classics chosen from E. Boyd Smith, from Kipling's storehouse, from Carroll, Baldwin, and Scudder, from Pierrault and Aesop and Mother Goose, and just as many as possible of the beautiful readers which the schoolbook publishing houses are bringing out in rare de luxe editions. One should see on each of the four walls of this room these shelves of books not 3 feet from the floor and within easy reach of every child in the room. For no seat work ever devised can be compared, either in its appeal or in its educational value, to a number of good books conned over and enjoyed by a child in the primary grades. Every primary room, wherever placed, should be so equipped, and particularly in the wealthy town of Winchester. Unfortunately, however, the rooms of Winchester were as barren of such enriching material as are schoolrooms generally in less-favored communities.

OPENING EXERCISES.

A devotional exercise and the singing of the old kindergarten classic, "Good Morning to You," opened the program. Then a few questions about the weather from the teacher followed. These roused the children to a point of interest, which as soon as gained was dissipated by an abrupt change to another subject in this wise:

(*Teacher*) What month is it? (*Pupils*) April.
(*Teacher*) What comes in April? (*Pupils*) Showers.
(*Teacher*) What rhymes with showers? (*Pupils*) Flowers.
(*Teacher*) What is the name of next month? (*Pupils*) May.

Here the teacher writes the word "May" on the board and the children read it in concert. Then she asks, "Who has a garden?" which calls forth an animated response of waving arms and eager voices announcing, "My father has one!" "We are making one!" "I'm helping plant the seeds!" Avoiding a further discussion of this interesting subject, the teacher declares, "We will have a garden here in school. Who will bring corn, and who will bring beans?" Again a wave of enthusiasm sweeps over the school, and many bits of gratuitous information are added to their hearty rejoinders, "I can bring two papers of seeds," "We have all kinds of seeds at our house," "We had some left from our own garden." At this point the teacher moves to the piano and strikes a chord for silence. "We will sing a song about the garden," she announces, and most willingly these docile little people turn their attention to the singing. They seem glad to follow their teacher through all the varying phases of her many-sided program. No amount of suppression seems to blunt the interest of a first-grade pupil, nor to restrain his cheerful acquiescence.

Reference is again made to the garden project, for after the song this dialogue ensues:

(*Teacher*) What must we have for our garden? (*Pupil*) We must have dirt. (*Pupil*) We must have mud. (*Pupil*) Not mud, but dirt.

(*Teacher*) Mud is dirt when we put too much water in it. Now let us sing our other spring song.

OPPORTUNITY FOR ORAL LANGUAGE.

Here are many openings for the highest type of oral language training. The children are full of the subject, they are more than willing to "talk it over," as their ready responses would indicate. The teacher has but to follow the lead of these ardent little gardeners to find her feet in the primrose path and carried along on the impetus of their enthusiasm. A wonderful incentive this, the making of a garden, to develop a unity of interest and a desire on the part of the children to express that interest. Our oral language is so apt to become static and fixed or to be neglected entirely that the teacher should be on the qui vive to utilize every bit of this desire that springs up in her class, and should remember that the more spontaneous the response the greater its value.

Observations of this kind undoubtedly reveal the fact that little children, especially, are led about from one topic to another throughout the day and are not allowed to assimilate any one of them. When a subject like gardening is under consideration it may well occupy the major part of the program at this season of the year, and may profitably extend over two or three periods in one of these daily programs. Many phases of this subject will bear a close study in detail, since it includes kindred topics which are of paramount interest to children in these grades.

PREPARATION BY THE TEACHER NEEDED.

Preparation for our work is what we need as teachers in the primary grades. How may one dare to put this question, "What must we have for our garden?" to a group of wide-awake, active, little children? Only by having in one's mind a carefully prepared outline on garden making, a series of problems ready to set these children to work upon, materials on one's closet shelf for experiments to satisfy the eager questions of this little group of animated interrogation points. Preparation is surely needed to meet a controversy regarding even so small a matter as dirt and mud. It opens a way for field lessons in which to collect specimens of soils and to conduct a series of experiments which shall determine their power to retain moisture and their capillarity, leading out to the practical questions of irrigation and dry-farming. It calls for visits to different garden plats in the vicinity, on high ground and on lower levels, and for walks in the country where systems of drainage have redeemed the swampy land and prepared it for cultivation.

Kindred subjects and projects, related to the garden, how many and how vital they are! Bird boxes in the garden, and what to do with the English sparrow; how is this little savage of bird life responsible for the depredations of the Tussock moth; the household cat and his relation to the fruit trees in the garden; the economic value of the American toad, and so on, through many phases of these natural phenomena. How wide a field and how necessary a teacher's broad and intelligent preparation!

Armed with but a single book, that of Hodge's Nature Study and Life, and a few bulletins from the Department of Agriculture, with an open mind and a willing spirit, the teacher may become prepared to meet these questions. With her outline ready, her data at hand, into what fertile fields may she not walk with these earnest little disciples? No need to strike a chord on the piano for silence! Speech is golden, since it shall express all the wonder and all the delight which these eager little explorers shall have discovered in the magical truths of nature.

MUSIC.

So the garden exercise closes, as far as that morning is concerned, and the teacher proceeds to a lesson in technical music. These lessons are directed by a supervisor of music and are uniform throughout the schools. They consist of formal exercises in note singing, from the blackboard for the first lessons, and later from the book and chart. The course includes, also, a number of rote songs for each grade.

This early training in the mechanics of music carries over into the middle grades with remarkable success, as the exercises observed in reading music in the third and fourth grades fully demonstrate. It is a serious question, however, if the means justify the end in the case of little children in the first grade. An enormous amount of time and effort is expended on these lessons at a period of the child's life when he should be absorbing impressions of tangible things about him, and finding expression for them in various activities, rather than a detailed study of abstract symbols which represent a high order of artistic accomplishment, even for mature and disciplined minds.

A LESSON IN PHONICS.

Phonetics is the next subject considered. Twenty-five or thirty minutes are given to this exercise for each day of the first school year, and the subject is carried on through the second and third grades in much the same way. It is unfortunate that the study of this valuable adjunct to the teaching of reading can not be expedited. Whenever it is taught in this way, it becomes a drag on the course of study.

The phonogram was used in this lesson as the unit of sound rather than the single sound of each letter. This method multiplies the work of teaching phonics indefinitely. There are virtually only 45 sounds to be mastered. Why can not this be done quickly and easily, without the weary drills and exercises one observes in most of the schools? One sound a day would fill only three months of school time and leave 10 days for drills and reviews. Why must an intensive study of this subject be carried through two or three years of school time? Possibly a detailed report of this lesson may throw some light on these questions.

The teacher calls attention to five words that are printed on a side board, evidently for reference, and to be used as key words, since the middle letter in each is one of the five vowels, arranged in their usual order of, *had*, *met*, *it*, *not*, and *put*. The word *put*, by the way, is an exception to the rule and does not illustrate the short sound of *u*.

(*Teacher*) Look over at our little fairies. What does this little fairy say when it is all alone [indicating the vowel in each word and printing them rapidly on the board]? (*Pupils*) *a*, *e*, *i*, *o*, *u* (giving them their short sounds).

(*Teacher*) Now let's put something else with this fairy, *a*, and see what it says then. Suppose I put this, *t*, with it, what does it say? (*Pupil*) (Sounding the letters each time) It says *a-t*, *at*.

(*Teacher*) Put *p* in front of it, May, what does it say? (*Pupil*) *p-at, pat.*

(*Teacher*) Put *th* with it. (*Pupil*) *th-at, that.*

(*Teacher*) *br, dr.* (*Pupil*) *br-at, brat, dr-at, drat.*

The teacher prints the letter *u* on the board and asks, "What does this little fairy say?" She then develops the words *bud*, *thud*, *dim*, *rim*, and many others in the same way.

Cards are passed to each pupil bearing the phonograms *ice*, *ack*, *and*, and *end*. Pupils stand, and as the teacher holds up a letter each child combines it with the phonogram on his card.

(*Teacher*) (Holding up the letter *p*). (What does your card say? Put this sound in front of it. (*Pupil*) *P-end, pend.*

(*Teacher*) Put *m* in front of it. (*Pupil*) *M-end, mend.*

(*Teacher*) Put *b* in front of it. (*Pupil*) *B-end, bend.*

After this exercise the cards are collected, shuffled, and redistributed. Other combinations are developed with other phonograms, *ake*, *over*, *at*, *ate*, *ale*, *ear*, and *ound*.

(*Teacher*) (Introducing a new phonogram, *ear*). You remember this old ending we had so long ago, *ir*? Sometimes *ear* says what *ir* says, for *ur*, *ir*, *er*, and *ear* all sound alike. See how many words there are that sound like *ir*.

(*Pupils*) Bird, birth, birthday.

(*Teacher*) Now I am going to change it and put *ir* with *t*. (*Pupils*) Dirt, thirst, first.

(*Teacher*) Suppose I put *y* on the end of these words, what will I have?

(*Pupils*) Dirty, thirsty.

This exercise seemed to be a waste of time except for the introduction of the new sound, *ear*. The children were already familiar with every part of it, with one or two exceptions, and these should have been dealt with individually. Time in this grade is too precious to spend in drills on facts that are already known.

Moreover, unless an application of these phonetic principles is constantly made in the reading lesson, and the power of analysis acquired in these exercises is used for gaining new words in reading, there is little value in them. Teachers should become aware of this great principle in education, and should put it into practice, namely, that training in one subject does not automatically carry over, even into an allied subject. The transfer must be consciously made with the help of the teacher. For that reason every drill on the mechanics of a subject should be followed up by its application to the solving of problems in other subjects.

GYMNASTIC EXERCISES.

After these exercises a recreation period was announced. This activity took the form of a gymnastic exercise in the trunk and arm movements under the guise of play. The children formed in line and were told to pass around the room and supply themselves with saws and axes, as they were going to chop down trees and cut them up into firewood. They shouldered these imaginary tools and passed back to their seats.

(*Teacher*) See if you can find a tree. All ready! Chop, chop, chop, chop. Now the tree is fallen what shall we do next? (*Pupil*) Saw it.

(*Teacher*) All ready! Right knee on seat. (*Pupils*) Zee, zee, zee (imitating with voices the sound and moving arms up and down with imaginary saws).

(*Teacher*) Move it along. All ready! Saw some more.

In the midst of this exercise the telephone rang and the teacher left the class to answer a call from a parent. Would the teacher please see that her little girl was sent to the dentist at half past 10? When the teacher returned to the room and had delivered the message she resumed the gymnastics. An exercise was introduced which called for deep breathing. An imaginary Thanksgiving dinner was spread before the pupils. They were told to close eyes and enumerate the different kinds of food by the sense of smell.

(*Teacher*) What do you smell? (*Pupil*) (drawing in his breath through his nose with lips closed) I smell onions. (*Pupil*) I smell cottage pudding.

Just at this point another call came over the phone from a mother complaining of the treatment her child had received on the playground. It would seem that interruptions of this kind might seriously interfere with the work of the school, and that the use of the phone during school hours might be prohibited, or that the telephone might be removed entirely from the buildings. The pupils stood patiently until the teacher returned to the room, and as five precious minutes had been consumed in this colloquy with the parent, the period for gymnastics was over.

GYMNASTICS IN THE LOWER GRADES.

For the lower grades, the first especially, any set gymnastic exercise is of doubtful value. These little children should be playing games, boisterous, laughing, running, and jumping games, under the direction of the teacher. A hearty laugh is the best possible deep-breathing exercise, a quick race to a goal the best possible leg movement. A game of squat-tag exercises every muscle of the body, and the stress of competition stirs up the "inner man" and puts the whole body in a glow of tingling vitality. Leave the gymnastics, even of the wood-sawing variety, to the higher grades, and turn the children out, if possible, into the open air for a run and a jump, a game, or a race at least three or four times during the morning.

Gymnastics are extremely formal drill exercises for the purpose of resting the body and exercising the muscles. Dramatization is a mode of expression and is esentially an art subject. It has to do with emotion, with thought, and feeling. It is a question whether it is possible to combine the two in the same lesson. One subject undoubtedly has a bearing on the other, just as the drills in phonics may carry over into the art of reading, but it is never wise to attempt to teach both in the same lesson. Why should the physical exercise be weakened by an attempt to dramatize it? Children love these drills. They love the rhythm, the poise, the sense of vitality which they engender. When music accompanies them this satisfaction is greatly enhanced.

The skill acquired in gymnastics carries over into most of the social activities and makes a strong appeal to boys and girls in any grade. Grace and dignity of carriage, poise and freedom from self-consciousness are some of the finer qualities they develop. In so far as these are concerned, they transfer over into the art of dramatization. But in the realm of sports and athletics, in the field of health and hygiene, gymnastics are indispensable in developing self-reliance and courage, and all those kindred attributes which build us up in strength and vigor. These purposes should be in the teacher's mind during her gymnastic period, and the subject should be taught in the wholesome, hearty way as a development of the child's physical and ethical nature.

Jennie Jones, weight, 36 pounds.
John Brown, weight, 40 pounds.

and so on down the line, each child making one of these tables, which affords an exercise in writing proper names and enumeration of numbers as well. Then imagine a number lesson of this kind:

(*Teacher*) Jennie, how much do you weigh? (*Jennie*, looking at her chart). I weigh 36 pounds.

(*Teacher*) How much does John Brown weigh, Jennie? (*Jennie*) He weighs 40 pounds.

(*Teacher*) Is he heavier than you or lighter in weight? (*Jennie*) He's heavier.

(*Teacher*) How do you know? (*Jennie*) Because 40 is more than 36.

(*Teacher*) How much more? Who knows?

Other questions follow. "Who's the heaviest boy in the class?" "Who's the heaviest girl?" and so on to any length the pupils can follow, and it is surprising how easily the ordinary class in high first and second can handle these problems. Why? Because they have a "social bearing," as Dewey so often reiterates. They are of personal interest to every member in it. Birthdays, which include a study of the calendar, might be mentioned here, and temperature for each day of the year, which calls for an intelligent use of the thermometer, are subjects of similar interest which may be used as a basis for these lessons.

Another great value grows out of this specific lesson. It disarms the children and changes their attitude toward the work of the health committee and frees them from a certain self-consciousness which their physical examination seems to entail. To any teacher who desires to follow up this suggestion in applied number the lessons developed on this subject by the division of hygiene in the Bureau of Education at Washington is recommended.

A READING LESSON.

In the reading lesson which followed the exercise in arithmetic the symbol was again overemphasized. The children opened their books to the story of "Crick, Crick," a bold young turkey who meets with a series of exciting adventures, and which furnished excellent material for a reading lesson. Instead of reading, however, the phonetic analysis of new words was taken up. So interwoven are these two processes in this lesson, the teaching of the new words and the reading of the text, that it is difficult to distinguish between the two.

The lesson is reported in detail to illustrate this point and to show that lessons in reading may become mechanical unless they are taught as a means of gaining ideas and not from the standpoint of technical study. The last process is important, but should not obtrude in the regular reading lesson.

The drill upon the new words proceeded in this manner:

(*Teacher*) Tell us the name of this story. (*Pupil*) Crick, Crick.

(Teacher prints the first syllable of the word, "pleasant," on the board and calls attention to the sound of the diphthong, *ea*.)

(*Teacher*) When there are two fairies, which one talks? (*Pupil*) First.

(*Teacher*) What does this first little fairy say? (Pupil gives the short sound of *e*.)

(*Teacher*) What does it all say? (*Pupil*) Please.

(*Teacher*) I'm going to put something with it (prints last syllable, *ant*). (*Pupil*) Pleasant.

(*Teacher*) Pleasant what? (*Pupil*) Pleasant voice.

(*Teacher*) Here's an old friend (prints wash on the board). (*Pupil*) Wash.

(*Teacher*) I'm going to put something with it (prints *ing* on the board). (*Pupil*) Washing.

After the words were developed, the reading began. A verbatim list of comments by the teacher is given to illustrate the fact that during the reading no reference was made to the thought in the story. In every instance the form of the words must have overshadowed and obscured from the child any meaning which the text might have had.

(*Teacher*) The first three lines go together. Is it for or of? Study the next line at the bottom of the page. Florence the next one. Which house? Now study the next one, one, two, three, four lines from the top. Is the word white? Mildred, there's a period after house, you want to stop. Next page. Ready, read. With her what? That's a good way. There's a period. How

many fairies in the word ear? Which one talks? Right, next page. Period, dear, now again. That's right, go on from there. That's right, go to the next page. That's right, now see what comes next. Right, go on from there. That's right up at the top of the page. We'll go on from there to-morrow.

OVERCROWDED PROGRAM.

Seven different exercises were given in this grade during the morning—opening exercises, a few questions about gardening, music, phonics, gymnastics, arithmetic, and reading—and all were treated from the technical standpoint. All were drills of an abstract nature. Yet outside the sun was shining, the birds were singing, and all the world of nature was beckoning to these children asking not to be forgotten. These boys and girls came from busy homes, where every variety of activity was being carried on while they spent 180 minutes in the manipulation of symbols. Conscientious, careful work was done beyond a doubt, but a change of viewpoint in regard to values would relieve this work of an overemphasis upon the technical side of primary education.

HOUSEKEEPING IN THE FIRST GRADE.

This little lesson in housekeeping was given in a room of 31 pupils, many of whom were evidently from the less-favored homes of the community. There were gathered here a group of children from parents of many nationalities, unmistakably new to American manners and customs and to the English language. A little melting pot of alien babies, shy and inarticulate, but ready to accept any suggestion that their teacher might make.

A few odds and ends for dishes and some tin utensils for silverware were used for this exercise, which consisted of setting and unsetting the table and putting the dishes away in the closet.

(*Teacher*) Who wants to be housekeeper? Who wants to set the table for me? Who's going to be mother? We'll have three people to-day, John and James and Mary. James and Mary may spread the cloth. John may straighten it. Now what shall we need (*Pupil*) Three plates. (*Pupil*) Three spoons. (*Pupil*) Three cups and saucers.

(*Teacher*) Margaret, come up and set the plates. Now, where shall we put the spoons? (*Pupil*) Right beside the plates.

(*Teacher*) Cups and saucers which side of plate? (*Pupil*) Right side.

(*Teacher*) Where shall we put the knife? (*Pupil*) Right side.

(*Teacher*) Where shall we put the fork? (*Pupil*) Left side.

(*Teacher*) Which dishes shall we wash first? (*Pupil*) Silver.

(*Teacher*) What comes after silver? (*Pupil*) Cups and saucers.

(*Teacher*) Who is ready for the next? (*Pupil*) Plates.

(*Teacher*) Now, who will fold the cloth? How many have helped mother clear table? How many have washed dishes at home?

All the children in the room raised their hands in reply to the last two questions; otherwise the exercise excited little interest on the part of the pupils. How may one account for the apathy and indifference which was manifested by these children during this lesson? Only 3 or 4 out of the 31 responded to any one of the teacher's questions. Was this because they did this work at home? Yet we are told that some phases of the child's home activities should be represented in the school curriculum. Was the exercise of a superficial nature and far removed from actual experience? Yet children love to play housekeeping out of school, to set the table, wash the dishes, and clean up the playhouse. Had this particular exercise been repeated so many times in the same stereotyped way that the novelty had worn off and nothing new was expected? Just what element was lacking to make this lesson a successful one? In the kindergarten and Montessori schools a luncheon period has been a part of the daily program from the beginning and has been of great value as a training in refined and courteous behavior. A real table has been set with real dishes. Food has been eaten, dishes washed and set away, crumbs brushed, floor swept, and room tidied. This period has been one of pleasure and of profit in these schools. Is it because there has been a real motive back of the exercise, a real demand for it in the minds of the pupils? Will lessons of the kind given here repeated day after day be apt to carry over into the home life of the child and make for better living in a school community?

These are pertinent questions which every primary teacher should ask as she is tempted to try out the new ideas which are urged upon her by those who speak with authority from higher schools of training. Let her be wise to question the motive back of her work and quick to read in the faces of her children the effect of her efforts in these new directions. Does not the whole subject resolve itself into this? What am I stressing in this lesson? Am I emphasizing the form or the idea back of it? In arithmetic is it the figure on the board or something real which the figure represents which is in the child's mind? In reading, does he think of the letter and the word on the page or does he get a vision of the meaning which they represent? In setting the table are the dishes only symbols or do the children see behind the formal lesson a table in their own homes set and served in careful, well-ordered comfort?

When we as teachers have become wise in judging of these values in all our lessons we shall have reached a plane of high efficiency, and the pupils under our care shall be led into that kingdom which awaits all those who are truly educated, a quickened and an understanding mind.

Much commendation is due this effort on the part of the teacher to bring an outside interest into her classroom and to incorporate it into her daily program. These are movements in the right direction and eventually, when shorn of their superficiality, will become a real power in the training of little children.

A RAINY DAY IN SECOND AND THIRD GRADES.

A rainy day brought a change of program to this room because fewer pupils made it possible to allow a greater freedom.

"May I go to the playhouse?" The smallest boy in the room stood at the teacher's elbow waiting. She turned to me. "I'm not following the regular program to-day," she explained. "So few are here, on account of the rain, I'm letting them choose what they would like to do after their work is finished. I hope you think it is all right," she added, deprecatingly.

"I think it's all right for sunny days as well," I heartily responded.

The smallest boy touched the teacher's hand. "I didn't think you'd let us have such a good time," and his face glowed with appreciation.

The playhouse proved to be a large dry-goods box on the floor in the front of the room, with a smaller one on top, filled with books and games and dissected maps and pictures.

The teacher apologized for this. "We brought the boxes from the grocery, and the children bring the books and games and pictures from home. We call it a playhouse, and they love it, even if the boxes are rough and unpainted."

A piece of worn carpet lay on the floor in front of the playhouse on which four children sat working picture puzzles in groups of two for each picture, which were scenes in large sizes of 5 by 12 from the story of Cinderella. Two little girls sat together on a low chair, reading to each other in low tones and talking over the story. One boy was absorbed in reading the Tale of Freddy Firefly, and others were at the blackboard working on arithmetic problems. Strange to say, this seemed like a great privilege when it was not required of them—a motive that might be more often utilized than it is.

ORAL READING LESSON.

An oral reading lesson in this room, as one might suppose, was of the highest order. It furnishes an excellent example of what reading for thought is supposed to mean. A few of the teacher's comments are given to illustrate her skill in helping each pupil to interpret the meaning of the text. It shows that the thought of the story was made prominent, and that the importance of the technical, so often overemphasized, was constantly subordinated to the ideas which words and sentences represent.

A story from Merry Animal Tales, Mr. and Mrs. Black Rat's House Party, furnished the text for the reading lesson. As the pupils read the teacher constantly suggested the idea to be conveyed and its appropriate interpretation by tone of voice and special emphasis, in this way:

(*Teacher*) Mr. Black Rat wanted whom to take the invitation? (*Pupil*) Mrs. Black Rat. (*Teacher*) Then suppose you say, "*You* take the invitations." (Pupil hesitates at the word "invitations.") (*Teacher*) What is it we send out when we invite people? (Pupil hesitates at the word "sponge.") (*Teacher*) A kind of cake. (Pupil reads hurriedly and is confused.) (*Teacher*) Wait just a minute; get the sense.

Nor was the formal side of this lesson neglected. Certain words in every text need special study, and these received their due attention. The teacher steps to the blackboard and calls attention to two of these as she writes *Mr.* and *Mrs.* on the board.

(*Teacher*) Let's have a good look at these words. Who can spell the words *Mr.* and *Mrs.*? Why are they written in this way? What is a contraction? What letters are omitted from these words?

Perhaps the most difficult point in the lesson came when a definition for the word "imagination" was attempted:

(*Teacher*) What does this mean, "didn't say one word about imagination"? Can you remember anything about imagination in the story? (*Pupil*) His mother thought there wasn't any lion when he said he had climbed on the back of a lion. Imagination is thinking something that you can't see.

VALUE OF SILENT READING.

In this grade the work of silent reading should be made a part of the daily program. There is no doubt that oral reading is overemphasized in all the grades of the public school. Silent reading is cultivated in the homes where children have access to many books, but the large majority of pupils will not have this opportunity. The schools must supply it for the less favored. Only on a rainy day with an entire change of program was this type of reading observed. It is most earnestly recommended that at least once a day the entire reading lesson in the primary grades be conducted as a silent reading exercise. In the first grade easy little primers and picture books can be used for these lessons. The children may have the privilege of using the book if they will report on it, not in a stereotyped way but spontaneously or in answer to questions.

In the third and fourth grades two children may enjoy a story together and talk it over, as in the case of the above report. Then they may tell the class about it. Book reviews of this kind are excellent material for oral language work, and occasionally these reports may be written by the third and fourth grade pupils. In Gray's report[2] on the relation of silent reading to economy in education he gives nine reasons why silent reading should be emphasized. Teachers should commit these to memory and bear them in mind as they arrange their daily programs.

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[2] Sixteenth Year Book of the National Society for the Study of Education.

1. Silent reading is a tool of first importance in the acquisition of ideas.
2. Silent reading is a more rapid process than oral reading.
3. Comprehension is usually greater in silent reading than in oral reading.
4. The rapid reader is usually more efficient than the slow reader.
5. Oral reading improves rapidly during the lower grades and improves steadily, but less rapidly during the intermediate and grammar grades.
6. Mastery of the mechanics of reading may be acquired more rapidly than ability to get the meaning of what is read.
7. Rate of silent reading increases rapidly during the lower grades and approximates a maximum in the upper grades.
8. Ability to comprehend the meaning of what is read improves steadily throughout the grades.
9. Rate and quality of silent reading may be improved through training.

A sermon might be preached on any one of these pertinent texts, but suffice it to say they are founded upon data secured through much experimentation and research.

GARDENING IN THE FOURTH GRADE.

A big school garden grows on a vacant lot each summer in the town of Winchester. The work is organized and superintended by the special garden teacher who takes her vacation in the winter and stays on the job during the summer. She sees the plowing done in the spring, at the town's expense, by the way, and she is there when the crops are harvested and the produce distributed in the late summer.

Thirty-five plats of land, each measuring 13 by 20 feet, constitute the area donated by the town meeting for this work. Two pupils work together on each plat, paying 25 cents each for seeds, and taking home last summer $5 worth of vegetables for family use per pupil. They meet twice a week for a field garden lesson with their teacher, and any child who is unable to be present or to go on with the work must furnish a substitute. The record for last year in this particular was a very good one. Only 6 plats out of the 35 changed hands during the summer.

The plats are laid out with borders of low-growing flowers of three varieties—marigolds, sweet alyssum, and zinnias. The vegetables are planted in rows lengthwise of the plat in this order: Two rows of corn, one of radishes, two of beans, one of beets, one of chard, and one of carrots.

In addition to this community school garden work, the garden teacher instructs the pupils of all grades above the second in the essentials of home garden cultivation. Her lessons in third grade on planting beans and in sixth grade on planting potatoes are here given in detail to illustrate the possibilities of this type of work in stimulating interest and arousing enthusiasm among boys and girls for the making and cultivation of gardens, for studies in plant life, their growth, diseases and nurture, and in addition the systematic organization of classroom lessons in such a way that many cross connections are established between the work of the different grades and between the different subjects of study.

CONCLUSIONS.

As a whole the work in primary education in the Winchester schools is found to be formal and lacking in virility. The mechanical side of the subject matter is overemphasized and illustrative material is sadly lacking. An endeavor to connect up the work of the school with the experiences which the child meets with outside was seldom observed, so far as this survey might determine. It is recommended that a primary supervisor be installed in the schools at the beginning of the coming session who shall unify the work of the different grades, motivate the work in reading, language, and number, and who shall so direct the teachers in these grades that they may take up the matter of primary education from a new viewpoint, that of the child's immediate needs, his interests, his desires, his best development, subordinating to these in every lesson the undue importance of the course of study and the amount of subject matter to be covered.

Reference has been made repeatedly in this brief report to the fact that quite generally the child's out-of-school experience is ignored both in the course of study and in the schoolroom practice in the schools of Winchester. Just what does this mean, the child's experience, and how may it become the dominating idea in primary education? What are the child's interests and experiences? What are they before he enters school, what are they now with the added school experience increasing day by day, and what are they destined to become as we look forward toward the future through the next year, and the next, and for many years to come?

What continuity of interest may the teacher in the primary grades hope to establish in her work between these experiences of the child in the past, the present, and the future, and between her grade, the one before, and the one which follows?

How shall she go about it? What material shall she use, what methods, and how shall the traditional subjects of study be fitted into a program that is based upon the child's experience and interest?

The child's home is of paramount interest to him; he is interested in the brute life about him; he loves the flowers; the passing of the seasons and the changing phases of nature affect him; pebbles and stones, the forces of nature, wind and rain and heat and cold, growth of plants in garden and field—all these come within the realm of his daily observation and interest.

Suppose the teacher recasts her program in terms of projects and problems bearing upon these interests and groups her technical subjects of study around them. In one school in a village in another State this was done with the home and its activities as a center of interest at the beginning of the school year. The children in the two first grades began by making observations of their own homes and discussing with the teacher how they are built and how furnished. Then each child made a booklet putting a picture of a house on the cover. Each week the pupils planned the suitable furniture for a room in the house. From catalogues and magazines they cut and arranged furniture for a living room, bed room, dining room, and kitchen.

Reading and language lessons were developed. The sentences were formulated by the children during the reading exercise and were written on the blackboard by the teacher, later to be typed and bound into small reading books which contained eventually all the reading material which this project included.

Early drawing lessons on the blackboard trained in flexibility and control, and led up to the first lessons in penmanship. Outlines of houses and flat drawings of furniture afforded excellent models for this work.

In playtime many lessons in social etiquette were inculcated, since these children had the habit of opening front doors and of wandering at will through any house in the village. The story hour was filled with selections which have a peculiar charm for children, on account of their repetitive quality, the Three Pigs and Their Houses and The House That Jack Built being especially appropriate.

The second grade furnished a house, and dressed a set of dolls to live in it. The third grade watched the building of a house, and as the teacher photographed from day to day with her camera the progress of the building, the pupils made blue prints for a little brochure on house building. The fourth grade in this school made a special study of a general grocery store, bringing small samples of cooking condiments from home and hanging them in bottles on a chart, reporting from time to time on the source and manufacture of these products. The fifth grade made a study of the village with reading and language lessons bearing upon the activities of the town. Booklets were also made in this grade and blue prints inserted of different views of "Our Village." Seventh and eighth grade pupils carried this study of local environment out into a larger study of American cities, how they were founded, their plan, location, governments, etc.

Here was a line of work especially adapted to each grade of the school in separate units and yet with relationships established between the different grades and a line of continuity running through from grade to grade which held the whole plan together and sustained its logical sequence from the beginning to the end.

Chapter IV.

THE COURSES OF STUDY.

CONTENTS.—Aims of a course of study. Principles of method. 1. The separate courses of the elementary schools; language and grammar; arithmetic; geography; history; civics; penmanship; vocational education; handwork in the grades. 2. Courses in the high school; modern languages; science teaching; mathematics; classics in translation; attitude of pupils toward school; supervision; music; drawing. 3. Supervision and organization in the elementary grades.

This is not the place for a full discussion of the philosophy which underlies the making of a course of study, but a comparatively brief statement of its main conceptions seems necessary in order to make clear the point of view in the light of which practical details must be determined.

In the making of a course of study, it must be recognized that education is not confined to schools. Everything that touches life from the cradle to the grave and that influences thought, feeling, motive, and conduct is a part of education. In short, we are educated by our environment, physical, intellectual, social, and ethical, all through life. The school is an artificial environment whose function is to prepare us to be effectively educated by the environment of life. Hence the school must educate with reference to the out-of-school life of the child and to the after-school life of the adult.

This means that the school should begin processes of development which are afterwards continued by the environments or duties of life. In this sense it must connect closely with life. The educational value of a study is therefore not determined by what it does for the pupil while he pursues it in school, but what it does for him all through life. A study which is dropped entirely when school days end has less educational value than one which is continued through life. This distinction becomes important in considering the educational value, say, of Latin or Greek which is dropped and that of vocational studies which are continued after school days are over. The former are more likely to be overestimated and the latter underestimated as means of mental development.

From the above it follows that the highest test of school education is not the ability it gives the pupil to pass examinations in school but the degree in which it projects itself into the out-of-school life of the pupil and into his after-school life later. To be specific: If the teaching of literature and of science does not lead the pupil to read literature and science out of school, there is something wrong with the school education; if the teaching of drawing and of music in school does not lead children to sketch on holidays for pleasure and to sing in the home the songs taught in school, there is something wrong with the teaching or the course of study. So with the entire curriculum.

A course of study must be constructed not only with reference to the duties of life but also with reference to the after education which life gives. It must not only make the individual socially efficient, but it must also give him the capacity to be effectively educated by the experiences of life.

FOUR AIMS.

The course of study must provide for at least four types of education, each having its own specific aim.

1. It must provide for training in the studies fundamental not only for life but also for all further advanced study. This includes the studies of the elementary school and some of the studies of the secondary school and the college. It must also provide for training in habits of conduct fundamental in life, and for the elements of studies like the sciences, the historical, literary, and philosophical studies, which give an outlook upon life, interpret its meaning, and determine one's attitude toward it.

2. It must provide specific training for some vocation. The time is surely not far distant when the pupil or student will not be allowed to leave school until he has been trained to do skilled labor, manual or mental, in some useful calling. This applies to rich as well as to poor. The moral obligation to do some useful work in the world rests upon both alike. There are abundant signs, which no thoughtful person can mistake, that in this respect the future will differ from the past.

3. It must provide education for leisure. It is probable that the working-day will soon be limited to 8 hours for the mass of workers. This will afford 16 hours for leisure and for rest. It is of vast social and moral and, in fact, also of economic significance how these hours of leisure are spent, whether in pleasures and activities which are elevating or in such as are debasing. This education can not all be given in school, but includes public amusements, public playgrounds, libraries, museums, and other agencies. But the school can make specific provision for it by providing instruction which will develop appreciation for art, music, and literature by [illegible] the play instinct on a high plane and by arousing a deep, throug[illegible] interest in the pupil's favorite studies, so that he will [illegible] sustained [illegible] his hobbies in after life.

4. At last, and in no wise least, it must provide for training for citizenship. All right education makes a man a better citizen, but the school must give specific training for this purpose, as outlined below.

Reference may be made briefly in passing to the theory of education once prevalent for many years, and still held by some teachers in colleges, that the aim of intellectual education should be mental discipline; that this is got chiefly by doing hard mental work which is the more effective if one does not like it; and that it is only of secondary importance whether the knowledge acquired is remembered permanently or not. It was further assumed by this theory that a comparatively few studies, like the classics, mathematics, and literature, served this purpose. It may be stated, without disrespect to persons still holding this theory, that it is not held by any serious and scientific student of education to-day. Current educational theory emphasizes content; and it assumes that mental discipline must come as a by-product in the acquisition of valuable content; that mental abilities are of great variety and must be developed mainly by specific means; and that the studies of the curriculum must connect closely with life, its activities and experiences.

It is obvious why, in accordance with this theory, certain studies, like Latin and Greek, which used to occupy a conspicuous place both in secondary schools and in colleges, occupy to-day a subordinate place in both. Greek, in fact, has been abolished very generally in public high schools. Algebra and geometry have been made electives in progressive high schools. Ancient history is being made an elective and will not be taught as extensively as heretofore. All these studies, which are mentioned here merely by way of illustration, have only a remote, indirect bearing on modern life. On the other hand, studies such as the natural sciences, modern history, economics, and sociology, which underlie modern life and interpret modern civilization, are receiving increasingly larger recognition both in secondary schools and in colleges.

While in colleges and universities the courses of study are very similar in all countries of western Europe and the United States, and the various studies are taught in very much the same way, with but minor differences in emphasis, a course of study for the elementary schools, and largely also for the secondary schools, in all countries is and must be national in character. That is to say, geography must be taught with the emphasis on the national geography, and that of other countries only as they affect the national life; history must be the history of the nation and of its historic relations to other nations; the literature taught must be predominantly the national literature, which holds up before the minds of pupils the national ideals and aspirations and interprets the national life. Science in its applications must be applied to national conditions; and even such a subject as arithmetic must be taught from the national point of view. An arithmetic dealing with pounds, shillings, and pence. or with mark, franc, and the metric system would be unintelligible and useless to American children.

This is only somewhat less true of secondary schools, and is a fundamental principle in program making.

PRINCIPLES OF METHOD.

Before discussing the methods of teaching specific studies in the curriculum, it may be helpful to state briefly some general principles underlying method in the different groups of studies.

There is no general, in the sense of universal, method applicable to all studies, as has been assumed by Herbartian writers, but there are general methods each applicable to a group of studies similar in character.

All the natural sciences, for example, must be taught by the method of observation and induction and deduction. The pupil must be led to observe and analyze the facts, to find their meaning, formulate a generalization and make its applications. Hence the function of the teacher is to stimulate and to guide. Facts which can be observed and generalization, must not be told the pupil. Here is where such aphorisms as the following belong: Pass from the concrete to the abstract, from the whole to the parts, from the simple to the complex, from the known to the related unknown, etc.

Then there are studies, like music, drawing, and literature, where not thought development but the development of the art instincts is the aim. The purpose is to reach not primarily the thinking but the emotions of the pupil. The appeal must be made through the senses and the imagination. The process must lead not to a generalization but to vivid imagery which arouses the æsthetic emotions. Not the method of analysis, as in science, but the method of synthesis which deals with wholes is the proper one. To teach these studies by the analytic method of science teaching is fatal to interest. We make this mistake when we emphasize prematurely the technical aspects of music or of drawing and when we analyze literature to shreds and overemphasize footnotes. These mistakes are very commonly made. It should be remembered that the most effective interpretation of literature, especially of poetry, is the effective oral reading of it to and by the class. Yet this is usually a subordinate feature of literature teaching.

Then there are studies which deal predominantly with words, the symbols of thought, like speaking, reading, composition, foreign languages. These symbols are arbitrary, and therefore the principle of prompt telling, instead of not telling as in science teaching, must be observed. The mental process is one of association of symbol with idea. The laws of association must determine the method.

Finally, there are studies like handcraft, penmanship, etc., in which the problem is the forming of correct habits. Here the method must be determined by the laws of habit formation.

These four types or groups of studies all come in some of their features under all these methods, but predominantly in each case under one.

Method is, therefore, determined by the subject matter in large part. It is also determined in great part by psychology, by the way the mind works. Hence the study of psychology is essential to the comprehension of method. It is also partly determined by the maturity of the pupil. Much may be assumed with mature minds which must be taught to the immature, and in science teaching more use may be made of deduction. Finally, method is slightly determined by the special abilities of the teacher. A teacher who is not fluent should rarely use the lecture method. He will get better results with the quiz method.

In teaching a subject—as, for example, arithmetic—it is necessary to analyze the material and decide to which groups the several parts belong. Some parts belong to the science group, others to the language or symbol group, and others to the habit-formation group. To teach all the material in any study by a single method would lead to some bad teaching. This is a common mistake in schools generally.

1. THE SEPARATE COURSES OF THE ELEMENTARY SCHOOLS.

After these preliminary statements of some of the fundamental principles which must underlie a course of study and method in teaching, we may proceed to discuss briefly, by way of running comment and suggestion, the separate courses of the elementary schools of Winchester.

These courses do not exist in printed form. They have been furnished to the commission in typewritten form. They have been quite recently revised and all the changes indicated in their typewritten form have not yet been made in the schools. The following comments are based on these courses and on personal inspection of the teaching in the schools.

LANGUAGE AND GRAMMAR.

Although Winchester is predominantly a city of English-speaking homes in which the children hear the language well spoken, nevertheless the town contains a growing foreign-born population which has already reached considerable proportions. In those schools which are largely attended by the children of the former group the language difficulty is not so apparent as it is in the schools attended principally by the children of the foreign born. In estimating the efficiency in language instruction in the schools of Winchester, this distinction must be kept in mind. In general in the schools of both groups it may be said that the instruction is reasonably efficient. Certain individual teachers have shown rare skill and ability in class exercises witnessed by members of the commission.

The book followed by the teachers was prepared more particularly to meet the needs of schools having pupils who must be taught English as a foreign language, and in consequence is more formal than is desirable for the children of many of the classes. It employs too short sentences in its exercises for English-speaking children. Much more freedom and spontaneity is desirable than is secured by following this book closely.

SUGGESTIONS ON METHOD.

The following suggestions on method are offered in the belief that they will aid the teachers:

1. When we write we think not in written but in oral speech. The ability to write fluently and with clearness and freedom depends on the ability to think fluently and clearly in oral speech. The quickest way to learn to think fluently in oral speech is to hear oral speech and to practice speaking.

From this it follows that thorough development of oral speech in the first four years of school life is the necessary condition for fluent written composition in the later elementary school grades. Hence there should be no written composition during the first two years, to speak conservatively, and not much during the third and fourth. Emphasis should be laid on written composition in the grades above the fourth, as suggested below.

Penmanship should, as a regular exercise, be begun not earlier than the middle of the second year, and preferably not before the beginning of the third. Only such writing as children naturally desire, like the writing of their names, should be incidentally taught. Children have no need whatever to express their thought in writing during those early years. Writing, moreover, is a muscular movement requiring delicate coordinations behind which there is no heredity as there is behind speech movements, and the accessory nerve centers controlling the movement are immature and are easily fatigued. For these and other reasons writing should not be introduced earlier than is above indicated.

Likewise set daily lessons in arithmetic should not be introduced until the latter part of the second year or the beginning of the third. The few things which children need, such as counting and learning to recognize the pages of a book, should be taught incidentally. Children at that age have no need of the arithmetic now taught in most public schools.

By banishing formal lessons in penmanship and in arithmetic from the first two years, room is made for reading to the children for a half hour each half day the best children's literature and for outdoor studies. The school would then do for all the children what is done in cultivated homes for the favored few.

Such reading to them would extend the range of their thoughts and their vocabulary; and extensive discussion or oral reproduction of this interesting material would develop their power of fluent oral expression to a degree far beyond what is now attained even in good schools.

Later, when they can read with some degree of fluency, the content of the interesting supplementary reading matter, now to be obtained, should be freely discussed in class. One needs only to observe the contrast between the fluency of speech of children outside of school and the lack of it in school to realize that there is something unnatural in school methods in this subject.

2. So far as written composition is concerned, two aims must be secured—grammatical correctness on the one hand and on the other clearness, freedom, fluency, and ease in expression. These aims can not be secured in the same kind of exercise. Insistence on grammatical correctness, involving persistent correction of errors as they are made, checks freedom and fluency and interferes with clearness of thinking. Briefly stated, correctness in grammar, punctuation, and the other mechanical elements of written speech are best taught by means of dictation exercises regularly given apart from composition writing. The aim of composition writing should be to secure clearness, freedom and fluency in expression, and only incidentally to secure grammatical correctness. Compositions should, therefore, be criticized chiefly for lack in these qualities and only incidentally for such mistakes of grammar as the pupil actually would not know how to correct. If he is held up to his best efforts, he will outgrow all errors which he can correct himself.

The subjects for compositions in elementary and high schools should be taken from the regular school studies and rarely from extraneous sources. The writing should reinforce the instruction in the other studies. Many short compositions should be required rather than few and long ones. In the upper grades and the high school children should be required to write under pressure by being limited in time. Dawdling will not secure fluency. It is possible to insist excessively on neatness at the expense of fluency and freedom. The manuscripts of men who write what other people want to read are not generally noted for their neatness. Many schools have erred in this respect.

The teaching of practical grammar in the elementary schools of Winchester is effectively done. Technical grammar is begun in the seventh year and continued through the eighth. The merits of the course lie in part in its simplification. Much needless matter often found in textbooks is eliminated. Such subjects as the subjunctive mood and the analysis of complex and compound sentences taught in the grades might be relegated to the high school. In general, all those parts of grammar which actually do not aid the pupil in learning to speak and write correctly and are of importance only as a basis for instruction in foreign languages in the high school should be taught only in the high school.

ARITHMETIC.

If formal lessons in this subject are deferred until the beginning of the second half of the second school year or the beginning of the third, as suggested above, some of the puzzling questions of method become simplified.

If the subject is to be begun the first year of school, as is now done, the course outlined for the first three grades is in general a good one. In the fourth and fifth grades emphasis is properly laid on drill in the four fundamental processes. In the sixth grade tables of weights and measures are emphasized, but without the suggestion that these weights and measures should actually be used in class and that every school be supplied with a set. In this grade, in addition to a simple treatment of commercial discounts, simple interest might profitably be introduced by means of easy problems. Only the finding of the interest or amount, the rate, time, and principal being given, should be taught in this grade.

In the eighth grade foreign exchange should be omitted. It is beyond the comprehension of elementary school children and few of them will ever have any use for it. Taxes, fire insurance, and customs duties might profitably be inserted in grades 7 and 8, provided the emphasis is not laid on the solving of problems, but on a detailed discussion of the subject itself. Children should know specifically what the principal community interests are for which taxes are paid and how they are assessed; emphasis should be laid on the fact that rich and poor pay taxes; that taxes are added to the rent and to the price of goods; and that in consequence the poor as well as the rich pay taxes, and all are interested in the honest expenditure of money collected.

In fire insurance the one thing to emphasize is its necessity and the folly of running one's own fire risks. The solution of problems is unimportant. Customs duties is of value only when it is made the subject for a clear discussion of the revenues of the National Government, the subject of the tariff, and the distinction between a tariff for revenue and a tariff for protection. This, like taxes, is essentially a topic in civics, and if taught there may be omitted in the arithmetic. A similar treatment of stocks and bonds is desirable. The solving of problems here also is unimportant beyond that of finding the rate of income on an investment. The important thing is a clear discussion of the difference between stocks and bonds—that the former are evidences of ownership and the latter of indebtedness; the relative safety in the same corporation of the two; the fact that, as a rule, a moderate rate of income on a security indicates safety of principal and a high rate the reverse; that in all investments the first thing to aim at is safety of principal. These are generalizations which can be made clear enough to pupils of this grade to render them immune to the temptations of the purveyor of swindling schemes, in which, according to Government estimates, the people of the United States "invested" in 1918 to the extent of $500,000,000.

In general, the Winchester course in arithmetic as a whole is a good one. It deserves credit for the elimination of much that has been retained in many schools through tradition.

METHOD IN ARITHMETIC.

In regard to method, there is room for considerable improvement. Too early emphasis is laid on the mechanical operations with figures and altogether too little emphasis on concrete illustrations of arithmetical thought processes. Every number process new to the pupil should be taught concretely, no matter in which grade it is taught. Objective illustration must not be limited to the primary grades, and the fear of some writers that there is danger of its being continued too long is unfounded in fact. Every process with whole numbers, with fractions, with decimals, and percentage should be concretely taught. Every proposition in the multiplication table should be concretely presented, not merely in the numbers up to 20, as is customarily done in schools. The multiplication table consists of mathematical equations; to have the pupil memorize them without being able to prove them is as objectionable as to have him later memorize equations in algebra and geometry without being able to prove them.

This overemphasis on the mechanical processes is probably due to the fact that the arithmetical tests of these processes used in the schools are more accurate than the tests of reasoning and more easily applied. The use of these tests is valuable, only teachers must guard against losing their appreciation of relative values in the use of them. Mechanical accuracy and speed are far easier to secure than ability to reason. The Winchester schools emphasize the former quite enough; they will strengthen their instruction by emphasizing the latter more. The use of concrete illustrations in developing every new thought process forms the foundation for training pupils in reasoning in arithmetic.

Apart from such greater use of concrete illustration of thought processes, the methods employed in the schools are well adapted to develop the power of reasoning in arithmetic. A very good statement has recently been drawn up by a committee of elementary-school teachers of Winchester giving sample problems for each grade above the second, together with suggestions as to method.

GEOGRAPHY.

The tendency in American elementary schools is to extend subjects taught through most or all of the grades. Penmanship is usually taught in all the grades; so are arithmetic and spelling. There is a general custom of beginning geography and history in the third grade. In European schools this tendency is not so marked. It is doubtful whether anything of the formal textbook type of geography teaching can be introduced with profit before the fourth grade, although there is much of the out-of-doors type which can be profitably presented, beginning even with the first grade. The topics usually assigned to this grade, as in the Winchester course, are essentially topics in nature study, and had better be so grouped. This would suggest a broader treatment.

The topics prescribed for the fourth grade are well suited to this grade, and the reference books and supplementary reading matter recommended are admirable. But the portion dealing with plants and animals had probably better be transferred to the course in nature study. The correlation with geography can easily be made. The topic "cause of changes of seasons," assigned to grade 5, is too difficult for this grade, and, in fact, too difficult for most pupils in any grade of the elementary schools. Contrary to general custom, it should be relegated to grade 8 or the high school. It is retained in textbooks by force of tradition.

The course might well attempt more in grades 7 and 8 in physical geography or physiography. The description of physical features is well provided for, but some provision should be made for instruction as to their genesis. A brief general description of the ice cap in America and the effect of glaciation on the course of rivers, on the formation of lakes, waterfalls, and water power, and on the distribution of soil; drowned coasts and drowned river valleys and their bearing on navigation; the simpler facts of erosion, the formation of soil, the work of rivers; the general facts of cyclonic conditions in the temperate zones determining daily weather changes—these are examples of topics which have been successfully treated in their elementary phases in the last two years of the elementary schools.

The fault of most schools, and textbooks as well, is that they attempt to teach too many topics and disconnected facts and fail of teaching thoroughly the essentials. The maps of textbooks are crowded with nonessential details which obscure the essentials and mislead teachers. The course would be improved if it should state principles of selection to guide the teachers. For example, a statement to the effect that in teaching the location of cities in the United States, only those large centers which are of much commercial and industrial importance should be fixed in the memory; that in teaching the location of rivers only those (1) which are used extensively for navigation, (2) those which furnish water power extensively used in manufacturing, and (3) those few greatly noted for their scenery should be fixed in the pupil's memory. Likewise, in teaching products, only such as enter extensively into commerce, especially our foreign commerce, should be taught; and in making production maps there should be included, not all the localities in which a given product is found or produced, as is done in our textbooks which simply copy our Government maps, but only those regions in which a product, like wheat or corn or cotton, is produced in large quantities for the markets of the world.

Suggestions of this nature would eliminate much useless material from the subject upon which time is wasted, and would make room for the more thorough teaching of the essential facts.

The course could be improved by providing specific training in the interpretation of maps in their various uses, some of which are simple and others difficult. (1) A map shows the boundaries or coast line and general shape of a country. This is easily grasped by the pupil. (2) It shows location. This is also comparatively easy. (3) It shows direction. This is easy in the case of maps of comparatively small areas on which lines of longitude and latitude run nearly in accordance with the cardinal points of the compass; it is difficult for young pupils in the case of maps of large areas, like those of the continents, in which direction is indicated wholly by meridians and parallels of latitude. (4) A map shows elevation. This for most pupils is the most difficult interpretation of all to make; hence the advantage of actual relief maps.

The interpretation of a map, like the reading of a working drawing, must be taught. Mere map study, such as is customarily found in schools, will not give this training. Such training in use of maps even in its simplest form should not ordinarily begin earlier than the fifth grade.

The course taken as a whole is good. With effective supervision, discussed below, the results should prove satisfactory. The lessons observed in the schools indicate intelligent interpretation of the course and skill and judgment in handling specific topics.

HISTORY.

This course is based on the "Report of the Committee of Eight" and follows it fairly closely. The lessons observed indicate intelligence and skill on the part of the teachers and interest and ready grasp on the part of the pupils. A course briefly outlined, giving clear perspective and proportion, with the report mentioned as a supplementary guide, would probably be of assistance to the teachers. A course in civics in connection with history is given in grades 7 and 8, as outlined in the history text used.

Concerning the course in history in the elementary schools, two suggestions are offered:

1. The plan of teaching a sketch of European history as the background of American history in one of the earlier grades (usually the sixth) of the elementary schools, outlined in the "Report of the Committee of Eight," if justified at all, is too ambitious and covers too much ground. Certain phases of medieval history do furnish a background for the earlier stages of American history; they make clear the motives for the explorations and for the early emigrations to this country. But Greek and Roman history have no more direct connection with American history than the history of the Creation had with the history of New York in Knickerbocker's famous history, and should be omitted. Such a sketch of European history had probably much better be given in the eighth or ninth grade, after pupils have a knowledge of the phases of American history for which it constitutes a background, or it should be given incidentally in connection with American history. This, however, is a question for the full discussion of which sufficient space can not be allowed in this report.

It should be added that the texts prepared to provide for this sketch are written in an interesting style, with much pedagogic skill, and are profusely illustrated. The teaching in the classes visited was skillfully done. But immature children, even if they absorb the facts, can not know and appreciate the historic setting which gives them their real significance.

2. A course in history for the elementary schools should include a sketch of the history of Canada and of Mexico and a briefer sketch of the history of the South American Republics, especially the history of their struggle for political freedom. The ignorance of even

educated American citizens of the history and of the racial, social, economic, and educational conditions in Mexico is a serious danger to our country to-day. The majority of our citizens know less about this subject than school children should know. Furthermore, the original significance of the Monroe doctrine, which has always been and is still a topic taught in all American elementary schools, is unintelligible to persons who do not know the history of the struggle for independence of our southern neighbors. And the best concrete illustration of its effectiveness is the history of the effort of Maximillian to become Emperor of Mexico. Such knowledge of our Latin American neighbors would also be the most effective single means of establishing friendly feelings and mutual good will.

3. In the ninth and tenth year it is desirable to give a background of European and Asiatic history. This can most profitably be done, however, not by offering systematically organized courses in the history of foreign countries, but by making significant epochs and movements in our own history the starting point and tracing the influences back to European or Asiatic sources as these naturally develop in the discussion. In such manner the significant things about European history will be surveyed not as is too frequently the case as units of study in themselves but in their relations to our own problems. Thus, naturally, there will pass before the pupils' attention such important matters as the French Revolution, the unification of Germany and the World War, important developments in English history, the remarkable rise of Japan, the stages of industrial development since the middle of the eighteenth century, etc. Such a course should be compulsory for all pupils, for it is necessary to adequate preparation for citizenship.

CIVICS.

"Civics" and "education for citizenship," like "Americanization," are somewhat vague terms to the public and are not altogether clear and definite to teachers. Civics to the public and to many teachers still means a study of the National Constitution, and usually of the State constitution as well. While from the standpoint of training for citizenship every pupil should be grounded in the important matters comprised in our State and National Constitutions, nevertheless the old-time, dry-as-dust grind on the details of both which has constituted almost the whole of civics teaching in so many paces is unwise and should give place to that type of civics instruction coming to be known as "community civics." Such a course should emphasize, not the duties of public officials but the everyday civic duties of all citizens.

The course in civics given in connection with American history in grades 7 and 8 of the Winchester schools fulfills this purpose fairly well and is well taught. In the high school the more advanced course should be made compulsory on all pupils.

But more than this should be done in the high school. Graduates of high schools, colleges, and professional schools should make the public opinion which proverbially is said to control government in a democratic country. Helping to make intelligent and sound public opinion is perhaps the highest civic duty of the educated citizen. Hence, in high schools and in higher institutions of learning all students should receive the training necessary to enable them to think clearly on public questions on which political action is necessary.

Now, most of our so-called political questions are economic in character, or rest on an economic basis, and can not be understood by anyone who does not know at least the elements of economic science. Others are sociological in their character and usually rest on an economic basis. These can not be understood without at least an elementary knowledge of economics and sociology. Again, all economic, and more especially all sociological, questions are in the last analysis also ethical or have important ethical implications. It is obvious without argument that for the educated citizen who attends school at an age when these sciences can be grasped at least in their elements, the most vital training for citizenship is the study of them, together with modern European history, as above explained.

Hence, the elements of economics, of sociology, and of ethics, as a minimum, should be made compulsory studies upon all pupils of both sexes in all high schools. Until colleges make these studies compulsory, as a few do, pupils in high schools fitting for college should not be excused from taking them.

STUDY OF CIVICS AND AMERICAN HISTORY MADE OBLIGATORY.

An act passed by the Massachusetts Legislature, effective in August, 1920, makes it obligatory that: (1) Every pupil take both American history and civics prior to graduation from the elementary school; (2) every pupil in the high school take at least one course in American history and at least one course in civics. In executing these provisions of the act the commissioner of education of Massachusetts has made the following wise recommendations: (1) That civic instruction be made continuous throughout the grades; (2) that systematic course in community civics be required of all students before the end of the tenth year or grade; (3) that an advanced course in American history and an advanced course in civics be required of all students in either the junior or senior year of the high school.

PENMANSHIP.

The method of teaching writing has recently been changed in Winchester, and the schools are in a transition stage in the subject, which makes it difficult to estimate their ultimate efficiency. Formerly the pupils used the finger movement in writing in all grades, with which speed is attained only at the expense of legibility. This is the reason why most adults "unlearn" after school days are over the handwriting learned in school. The schools have changed to the "muscular" or forearm movement, which has been taught in good schools for a great many years and has no essential features that are new or original.

In the present transition stage the results are not satisfactory, but it is a change in the right direction; and when pupils have adjusted themselves to it and teachers have mastered the method, there will be a marked improvement in the writing.

As stated above, writing as a regular exercise should be deferred at least until the latter part of the second school year or the beginning of the third, for the reasons given. If it is retained, the children ought to be allowed to use the finger movement during the first three years. So long as children have not mastered the form of the letters completely their writing movement must be slow, so as to make it possible for the eye to follow and guide the movement. This is not possible with the rapid muscular movement. In the fourth year of school the transition to the forearm movement can be made in a short time without difficulty, as has been abundantly demonstrated in good public schools.

There is great need of supervision of this subject at this transition period. The teachers feel keenly the need of help and direction and would welcome it. There is, however, no need of a special supervisor of it, if a general supervisor of the elementary schools is appointed, as elsewhere recommended in this report.

VOCATIONAL EDUCATION.

With the exception of the commercial training in the high school, no provision is made in the school system for strictly vocational education. This is a serious defect, and would be more serious still if Winchester were less of a residential and more of a manufacturing town. Yet the majority of pupils will follow callings other than professional and have a right to the necessary educational facilities to fit themselves for them.

It is recognized that it is difficult to establish in a small community the variety of types of education to meet the needs of the variety of types of mind, and yet the rights of children to education do not vary with the size of their home town. The solution lies clearly in State action in the matter. The State should be petitioned to organize a vocational school in a locality accessible to pupils of Winchester and of several adjoining towns. Such a school should contain both prevocational courses and courses fitting for such trades as local conditions make desirable.

It is well known that certain labor organizations object to vocational schools; but, briefly stated, such opposition rests on two objections which are valid and which can and should be avoided in any system of vocational education. First, they object to trade schools in which pupils can get a smattering of a trade and then as half-trained workmen compete in the labor market with well-trained men. Secondly, they object to trade schools in which the training is narrow and confined almost exclusively to the handwork of the trade. They fear that such training will tend to create a servile class and close the door to advancement to the so-called higher walks of life. These objections are sound.

For the obviating of the first objection labor unions and employers must aid the schools. Pupils from a trade school should be refused employment and membership in a labor union unless they complete their trade education. Legislation extending compulsory school attendance can also aid.

The second objection can be removed by the school unaided. In brief, a course in a trade school should, first of all, include as required studies all the technical and academic studies which have a direct connection with the trade. Second, it should include as electives as many other academic studies as the pupil has the capacity to take. In this way pupils would receive as broad a general education along with their specific training in a trade as their minds can take on. Such vocational education is probably the broadest and most effective general education for a majority of pupils in public schools generally. To pupils so trained the door of advancement can not be closed, except by their own lack of native ability. The valid objections to vocational schools lie, therefore, not against vocational schools as such but against vcational schools of the wrong type.

It may be added that the learning of one trade in which the pupil is deeply interested at the time, even if later he decides to follow another, is a better preparation for the learning of such other trade than dawdling over mere books in which, apart from their connection with his desired trade, he has no interest, as this class of pupils now usually do in the upper grades. Compulsory laws can only compel attendance; they can not compel a pupil to study.

HANDWORK IN THE GRADES.

Much more handwork is desirable in the grades than is now given in the Winchester schools. It is confined almost wholly to the upper grades of the elementary schools. It should be a part of the work in all the elementary schools. The argument for educational handcraft is too familiar to require restatement here. It should be extended in the grades usually constituting a junior high school, and should at least include metal work, lathe work, and printing. At present it is confined to woodwork. The appointment of a supervisor of instruction, as elsewhere recommended, will solve this problem, and detailed recommendations are unnecessary here. The problem is not a new one and will be easily handled by the superintendent and a competent supervisor.

INDUSTRIAL WORK IN THE PRINCE SCHOOL.

The industrial work in the Prince School is an admirable beginning for making provision for feeble-minded children, who can profit much less from book education than is commonly assumed. For them motor training is the only effective education; it is the most effective means of awakening the limited mental cacpacities which these unfortunates have. The work of this type should receive liberal support, and an effort should be made, by furnishing free transportation to those living at a distance, to induce all pupils of this type in the town to attend.

2. COURSES IN THE HIGH SCHOOLS.

MODERN LANGUAGES.

The feeling created by the war made the study of German in most high schools and in many colleges unpopular and caused a marked reduction in the classes. French for the same reason has gained in popularity. This change is very marked in the Winchester High School.

French is now taught in the eighth grade and in the high school, and a pupil may take a five-year course if he so desires. It is taught by the direct method in the eighth grade; and by a combination of the direct, or conversational method, and the indirect, or translation method, in the high school, with great predominance of the latter. In grade 8, only those pupils are permitted to take it who make a high grade in their other studies, which is unquestionably a wise policy, as explained below. In the high school in certain courses either French or German must be taken.

The teaching of French in grade 8, so far as method is concerned, is unquestionably of the right character, and results will clearly show this in due time. In the high school neither the method nor the results are what they should be. This is not because the teachers are not competent, but is due to the fact that college requirements make such extensive demands in regard to translation and grammar that the teachers feel that these demands can not be met by the extensive use of the direct method in the early part of the course. College entrance requirements unquestionably vitiate much of the teaching in eastern high schools in such departments as modern languages, English, mathematics, and to some extent in science. This is much less true of high schools of the West.

High-school teachers, however, yield to college domination, so far as method of teaching their subject is concerned, far more than is necessary if they adapt their methods to these requirements throughout the entire course. They can greatly minimize their evil effects by teaching their subjects as they should be taught, regardless of college requirements.

The high school should not be looked upon primarily as a college preparatory institution; rather the college should accept pupils of requisite school experience where they find them in point of training. The methods of instruction employed by high-school teachers, as well as the content of high-school studies, should not, therefore, necessarily be determined by college requirements. Nevertheless, it doubtless would be desirable to reserve a brief period toward the end of a course in a language which shall be given over partly to a review of the grammar of the language and intensive drill on the constructions. Such brief review and drill ought to enable pupils to meet college entrance requirements without vitiating the work of the entire teaching period.

It ought to be added that the teaching of French in the high school is as good as the teaching of this subject in all except the best high schools; and the change required is that from the indirect, or translation method, to the direct in the earlier years of the course.

The following brief general suggestions may be helpful in making the desirable change:

MOTIVE.

The educational value of a modern language lies not in the discipline, or mental culture, acquired through the process of learning it, as is commonly assumed. This probably has some value, but is not sufficient to justify the time required. Its real educational value lies in the use made of the language in life after it has been acquired, either in the way of reading or business.

In addition, then, to those who wish to study a given language for its literary value, only those should be encouraged to study French or German who may need one or the other for scientific purposes, while the study of Spanish should be advocated only for the few who may need it in business.

In the eighth grade, where the question of entering a higher institution of learning can not be definitely decided, all pupils who make a high grade in their other studies should be allowed to take one modern language. This, as above stated, is now the policy in the schools and is the correct one to follow.

METHOD.

The direct method is so named because it avoids translation at first and makes a direct association between the learner's ideas and the foreign vocabulary, while the method by translation makes an association between the foreign vocabulary and the learner's native vocabulary, and therefore an indirect association with his ideas. With the latter method the pupil never learns to think in the foreign language, never can speak it fluently, must mentally translate it in reading, and hence never can read it rapidly and with ease.

The direct method is also sometimes called the "natural method," because it is the method by which children learn their vernacular. But, as frequently used, the direct method is not wholly a natural method. A few comments on this point will make it clear.

1. Little children hear the vernacular spoken to them a year or more before they try to speak it. They understand what is said to them before they can say a word. They learn to think in their mother tongue by hearing it spoken; then speaking it later becomes easy. Cases are on record where children did not speak until they were 4 or 5 years old, and spoke complete sentences the first time they tried.

Applying these facts to the direct method, the suggestion is made that the teacher speak the foreign language in class for a long time and let the pupils answer in English until they have learned somewhat to think in the foreign language. This also makes for correct pronunciation, as pronunciation turns on correct hearing.

2. Children in learning their vernacular become fluent before they become grammatical and before their pronunciation becomes correct. In school we demand grammatical correctness and fairly correct pronunciation from the beginning, and seldom get fluency. We have not the courage to let mistakes pass uncorrected.

3. We often make the mistake in high schools, when reading texts in the foreign language, of not giving pupils a great deal of easy reading matter, written in the vocabulary and idioms of everyday life, and rushing them too early into literature, even into poetry, which is not the language in which even educated natives habitually think and speak.

After the direct association between thought and the foreign vocabulary has been made an habitual process, translation will not change it; later in the course translation has its place. In grammar only such parts should be taught as actually help the pupil in learning to speak and understand the language, and they should be taught only when needed. Grammar should be treated as a means and not as an end.

With these modifications, the direct method now used in the eighth grade should be extended through the high school. There is no reason why children who have studied a modern language for four or five years should not speak it fluently, as in fact they do in foreign countries in secondary schools.

SCIENCE TEACHING.

It was the custom until recent years even in the best high schools to teach the natural sciences as pure sciences, using the laboratory method. The teacher described the experiment to be made by the class; the class performed it according to directions; by the quiz method they were led to formulate the generalization; then they copied it into a notebook. That was the end of it. Occasionally one or two applications were suggested. In physics, especially, texts degenerated into mere laboratory manuals giving directions for performing specific experiments. College requirements were expressed in terms of experiments, the number and kind of experiments being quite definitely prescribed. The old "Harvard physics," of 20 years ago, was the most widely known example. The result was that the sciences were comparatively unpopular in high schools, and the per cent of pupils who elected them declined during a series of years.

This has all been changed in recent years in the best high schools. While mature students in college and university are interested in the abstract truths of the sciences, immature pupils in elementary and high schools are not. Their interest lies in the applications of these truths to concrete situations and phenomena. Hence the trend is to teach applied science in elementary and secondary schools, and leave pure science mainly for the college and university. For immature students the explanation of situations and phenomena is the motive for knowing.

The manipulation of apparatus and the making of an experiment under specific detailed directions, and then formulating a generalization with the help of the teacher, was not only uninteresting to pupils, but it also required little thinking; and the teaching of the sciences was a distinct disappointment as a means of training in thinking.

On the contrary, applied science begins with the observation of the situation or phenomenon to be explained, analyzes it, formulates a tentative explanation or hypothesis, then takes this hypothesis into the laboratory and tests it under conditions which can be controlled; and finally, if found true, applies it to numerous similar situations or phenomena. This requires a maximum of analysis and thought.

The motive for the experiment is found out of doors, and the final explanation is again carried into the outside world; the laboratory experiment is simply an indoor stage between two outdoor stages of the process. In short, the aim of the process is to interpret to the pupil the physical world about him. There is more educational value in formulating one generalization in this way and making 50 applications of it than in formulating 50 generalizations and making no applications or only one of each. Each new application is an additional proof of the truth of the generalization, and, what is more significant, it is also a new interpretation of its meaning and scope. This has come to be known as the " project method," a term borrowed from the manual training school in which it was first used. It is essentially like the " case method " in law schools.

As situations and phenomena are to the pupil the motive for study, and as few situations and phenomena which interest him find their whole explanation in any one science, the elements of most or all of the natural sciences must be included in an introductory course in science. This has given us what is known, for want of a better name, as " general science." Such general science is followed in high schools by an individual treatment, properly coordinated, of the different sciences, to be taught as applied sciences, in which the formulation of generalizations is effected with no less care for accuracy than was insisted upon in the teaching of pure science years ago. In brief, science teaching for the young should begin with applied science and gradually merge into pure science. This order is the reverse of the order followed in the past.

MATHEMATICS.

In a similar way the teaching of mathematics has been changed in the best high schools. In arithmetic thought processes are developed from the concrete, followed by training in the abstract, as already explained. This is the only way to secure intelligent thought.

In algebra, graphs and other concrete illustrations are freely used; and in the best teaching applications are made to technical and commercial problems which appeal to the pupil and which make the truths of algebra significant and vital.

In geometry an introductory course should be given in experimental, or "inventional," or "concrete" geometry before abstract definitions and abstract demonstrations are attempted. Under the best teaching the text gives only the propositions to be demonstrated, with such hints as the pupil may need; and all the work is "original," as this term is commonly used in this connection. Geometery is applied to problems presented by the outside world and in this way, like the natural sciences, is made vital to the pupil.

In short, mathematics should be taught in elementary schools and in high schools as applied science. The order is from the concrete to the abstract, from applied to pure mathematics, not the reverse. In this respect the teaching of mathematics in the Winchester schools can be strengthened.

LATIN.

Greek has been eliminated from all high schools in the West and from most high schools in the East, and may be disregarded in this discussion. Latin is everywhere on the defensive; and while it may be permanently retained, it will be elected by fewer pupils than is the case now. This is not the place for a discussion of the merits of the arguments for and against it.

But it is practical to suggest that many pupils in high schools generally who now elect it should not do so. If a pupil has a special taste and talent for it, and consequently can make rapid progress in it, he can no doubt get a great deal of good from it. But if he needs an entire year, with a daily lesson, to acquire the ability to read Caesar's Commentaries, he could far more profitably pursue some other study, of a more practical nature, for which he may have talent. In general a pupil who during his first year of the study of Latin has not shown an aptitude for it should not be allowed to go on with the study. Under a system of semiannual promotions, elsewhere recommended, classes in other subjects which such pupils could enter could easily be made to begin in the middle of the year.

While a modern language should be begun early and by the direct method, as already explained, Latin, taught by means of translation and grammar, should be begun late, when the mind is mature enough readily to grasp the principles of grammar. Experience has abundantly proved the correctness of this statement. Three years of Latin, with a reduction of the amount required by the colleges, would permit the study to be begun the second year of the high school instead of the first. One of our leading eastern colleges has recently made this change and others must follow.

In the best teaching of Latin to-day great emphasis is laid on its bearing on English etymology, and the subject is further vitalized by means of illustrations from Roman life, Roman history, and Roman thought.

CLASSICS IN TRANSLATIONS.

While it is no longer practical to require a study of the classical languages as a part of general education at this day when there is so much science that must be known by every educated person, the proper substitute for the classical languages is not the modern languages but classical literature in translations. The high schools by largely dropping the classical languages have brought about only one-half of the reform. The other is the introduction of the classics in translations—much of the Iliad and the Odyssey; Plato's Apology, Crito, and Phaedo; several of the plays of each of the three great Greek dramatists; and much of Virgil's Æneid should be read in every high school, partly in class and partly out of class. This would give pupils a far better insight into classical life, thought, and civilization than the present study of the classical languages.

ATTITUDE OF PUPILS TOWARD SCHOOL.

In the high school, and to a less extent in some of the elementary schools in Winchester, the attitude of pupils toward their school work is not all that could be desired. They do not take their work seriously enough, and in the high school many who could do much better are satisfied with a mere passing mark. The idea of what is called a "gentleman's grade" in college seems to have crept into the high school. The pupils here referred to come more frequently from cultivated homes. It ought to be stated that this evil is not an unusual one in suburban communities where there is a large number of pupils from prosperous homes. It is a besetting evil in many private schools as well, often bitterly complained of by teachers in these schools in private.

For this condition the responsibility rests partly upon the teachers and partly upon the parents. Many of the pupils have too many distracting social privileges outside of school, and are not sufficiently controlled in their life habits and their habits of study in the home. Without the hearty support of the parents, the teachers can not change this condition. It is, taken all in all, the weakest single spot in the high school, and it is for the parents to wake up and take the matter seriously in hand.

In general, it may be said in regard to all the schools that criticism of them and of the teachers should not be made in the home in the presence of the children, and yet this is common in most communities. It is almost as unfair and as harmful to children for parents to undermine their children's respect for their teacher as it would be for the teacher to undermine the children's respect for their parents. Criticisms of schools are entirely in place. They bring about improvement when intelligent and just. But they should not be made to or in the presence of the children.

SUPERVISION.

While the teaching corps, taken as a whole, is efficient, and everywhere there is evidence of a fine professional spirit, there is great need of more effective supervision of the instruction than the superintendent, with his other administrative duties, has time to give. The administrative problems are well handled by him. His reports for 1918 and 1919 are admirable; they deal intelligently with vital current problems and show that he keeps in close touch with the educational thought of the day and with the latest developments in methods of administration, such as intelligence tests to determine the native ability of children as a basis for classification and efficiency tests to ascertain the efficiency of the instruction. But such testing of efficiency is mainly negative in character. Its purpose is to discover the weak and the strong features of the instruction. What is greatly needed in addition is a supervisor whose aim is to guide and aid the teachers in making their teaching more effective. There should be appointed a supervisor who will spend all her time in the schools, helping teachers by suggesting better methods and devices and teaching model lessons to illustrate her suggestions. Such supervisors should hold frequent meetings of teachers, after school hours, to discuss with them in a most practical way their vital problems. Occasional meetings of all the teachers of the elementary schools should be held for the discussion of problems common to all and for the discussion of general principles of education. These should be followed by frequent joint meetings, not less than one a week, of several grades whose problems are similar or closely related.

These meetings should rarely be given up to a discussion of petty details of discipline or to a miscellaneous expression of opinion, but should be devoted to a systematic treatment by the supervisor of the methods of teaching each subject in the curriculum and the psychological principles underlying them. Each subject of the curriculum should be treated in a series of systematic, consecutive meetings of this kind, very much as it would be treated in a practical university course. Such training of teachers in the service should simply be a continuation of the professional training begun—but only begun—in our best normal schools.

It is a mistake to assume that the theoretical training of teachers is completed in a good normal school, and that all the young graduate needs is practice and experience. The fact is that students in normal schools are too immature and their academic training is too limited for them to grasp the philosophical basis of the general educational problems or the psychological basis of methods of teaching.

University extension courses are meeting in part the need for this advanced training, but only in part. They can not meet it adequately because they come too infrequently and are not followed by the instructor in the schools to aid teachers in practically applying the instruction. Furthermore, teachers are entitled to receive without cost to themselves much of this instruction to which they contribute their time.

The teachers' meeting of the nature described is the most effective single means of building up a system of schools, and without it the finest professional spirit and the most efficient teaching can not be developed. Instruction can not be effectively supervised and directed from a central office by printed directions. There is need of the personal contact on the part of the supervisor with the teachers, both in the teachers' meeting and in the schools.

Such supervisor for the elementary schools in Winchester should be a woman of broad academic and professional training and of considerable experience in teaching in the elementary schools. Men seldom have this experience. She should have, besides, the personal and social qualities of leadership which the successful direction of a corps of teachers requires. She should have charge, under the superintendent, of all the instruction in the elementary schools, including penmanship and practical arts, except that in drawing and music, for which special supervisors are required.

MUSIC.

The supervision in music is in general efficiently done, except that more emphasis should be laid on voice quality in all the grades. The reading of music in the grades above the primary is well taught, but the voice quality in all grades is not as good as it should be. In the primary grades the chief aim should not be to train children as early as possible to read music, but to love and enjoy it. To accomplish this, emphasis should be placed on tone quality and on the singing of beautiful simple songs learned by rote. Music is art, and the chief function of art is to be enjoyed. While the more advanced study of all art requires the mastery of technique, which is not necessarily enjoyable, in the art education of children, technical training should not be prematurely emphasized so as to make the study a task and rob it of its enjoyment. There is altogether too much emphasis on technical work in the primary grades of the Winchester schools.

DRAWING.

The drawing in the elementary schools is taught by art students from the normal art school of Boston, and is supervised by a representative of the faculty of that school. While this representative is highly competent, she is unable to give enough time to this supervision to make it effective, and she strongly urges the appointment of a special supervisor who will give his entire time to it. The instruction in this subject, given as it is exclusively by inexperienced but well-trained students, is not satisfactory. There should be appointed a special supervisor who, as stated, will give all his time to the work. If this should be deemed for any reason not feasible or possible, then a supervisor should be appointed who will give three days a week to this work and two days to like work in some near-by town, as the supervisor of music is now doing. Such supervisor should hold teachers' meetings, and should teach the lesson in the schools on at least two visits out of four. Between his visits the lessons should be taught by the regular grade teacher and by the students from the normal art school. With such supervision these students would do more efficient teaching and would profit more by their experience. They should be required to attend all teachers' meetings on drawing.

3. SUPERVISION AND ORGANIZATION IN THE ELEMENTARY GRADES.

To summarize, the pressing need of close supervision by a skillful supervisor of the elementary schools is strikingly evident from the unsatisfactory condition of the penmanship at this time. Some of the teachers feel helpless and discouraged because they are not getting results satisfactory to themselves; virtually all feel the need of competent assistance. It is further evident from the absence in the lower grades of the hand craft, or manual training, which is to-day found in progressive schools. To organize and direct this line of work, expert supervision is needed. The general supervisor of the elementary grades will be able to direct both these lines of work.

The teachers of Winchester, while differing widely in degree of native ability and of efficiency, as any teaching corps will, are well trained. They are all graduates of good normal schools or of colleges. While there is much good and some admirable teaching done in the elementary schools, the efficiency of the corps as a whole can be very considerably increased by a competent supervisor. Effective supervision is probably the most economical part of any school system.

There is at present considerable complaint by teachers in certain places of "oversupervision." This complaint usually comes from the large cities, where the machinery of administration is more complex than in smaller communities. The cause and significance of this complaint must not be misunderstood. It is not the supervision here recommended of which teachers complain. They would heartily welcome it. They object to the so-called supervision found in many of our large cities which consists not in systematic visiting of schools and helping teachers to do their work in more skillful and effective ways, but which consists in issuing printed directions and orders, in requiring multitudes of statistics which, without clerical help, it is laborious work to collect, and which seem to the teachers and often are in fact not worth the labor when collected. They object to a supervision which is rigidly prescriptive and robs them of the freedom of using their own judgment. They object to being made simply a part of a huge machine.

Teaching under such conditions becomes as deadening as work in a shoe factory or a cotton mill, and teachers feel that these conditions are the more intolerable because they realize that they have a moral responsibility which they can not discharge.

Teachers further object to being pushed and driven by special supervisors of such subjects as drawing, music, etc., who know only their own subjects and do not know the rest of the program which teachers are held responsible to carry out.

A general supervisor of the type here recommended would be in a position to coordinate the various lines of work and prevent undue pressure by specialists for their own specialty. It ought to be added that there is no evidence at present that such pressure exists in the Winchester schools. In drawing, as already noted, the supervision is inadequate, and more time should be given to the subject.

Aside from dealing with the administrative and the financial problems of the schools, the superintendent should spend much time in the schools to discover the strong and the weak spots in the teaching. A very essential part of his work should be to study new phases of elementary and secondary school work in different parts of the country; to keep informed of the important educational experiments that are being made in progressive communities and in private experimental schools. He ought to be the channel through which new ideas are brought to the teachers in the schools and to the community at large.

From time to time he ought to hold teachers' meetings at which he can present new points of view, and at which teachers can find an opportunity to express their own views. Not the least of his functions is that of interpreting the work of the schools to the community, arousing public interest in them, and securing hearty public support.

In short, his function is that of leadership in educational matters in the community of such sort as will secure the hearty cooperation of teachers and citizens in the work of the schools, rather than in dealing with minute details.

Chapter V.

THE WINCHESTER HIGH SCHOOL.

CONTENTS.—1. The pupils; effect of college entrance requirements; enrollment by curriculums; the most attractive curriculum; human and social aspects; success in preparing pupils for college. 2. The curriculums: basis for reorganized curriculums; college preparatory curriculum; commercial curriculum; home-economics curriculum; industrial curriculum. 3. The teachers and their work; training of; experience of; teaching load; duties of part-time teachers; size of classes; promotions, failures, and eliminations; meaning of teachers' marks; comments on teaching; errors of teaching technique; good things observed. 4. Organization, administration, and supervision; the administrative personnel; misuse of school telephone; principal's office hour; supervision of instruction; directed study; pupil self-government; socialized recitations; educational and vocational guidance. 5. Building and equipment. 6. Conclusions and recommendations.

1. THE PUPILS.

The enrollment of the high school in March, 1920, was 311, and that of the elementary schools was 1,335. The total for all schools was 1,646. The high-school enrollment was 18.9 per cent of the total. This percentage is an index of the high school's holding power. It means roughly that, out of every 100 pupils enrolled in all the public schools of Winchester, 19 are enrolled in the high school. In order to know how good this percentage is it must be compared with a similarly derived index from other schools in essentially similar towns. These are not available for the present year; but similar percentages for several Massachusetts towns with which Winchester is comparable have been calculated from reports made to the United States Bureau of Education for the year 1917–18, and are shown in the following table:

Relative holding power of Winchester High School.

Towns.	Per cent of all public-school pupils who are enrolled in the high school.	Rank according to percentage.
Wellesley	17.6	1
WINCHESTER	17.5	2
Belmont	15.4	3
Brookline	14.4	4
Milford	12.6	5
Norwood	12.2	6

For these six towns, then, Wellesley stands first in holding power, with an index of 17.6, while Winchester is a very close second with an index of 17.5. For the entire State of Massachusetts in the year 1916, the latest date for which figures are available, the ratio of pupils enrolled in high schools, both public and private, to those enrolled in all grades of both public and private schools, including colleges, was 12.89 per cent. With reference to this ratio, California ranked first among all the States (14.55 per cent) and Massachusetts was second among all the States.[1]

The fact that the Winchester High School, as to holding power, is thus seen to rank high among the best towns of approximately the same population as that of Winchester, and this in a State that ranks second among all the States as to the proportion of all its school youth who are enrolled in high schools and colleges, should afford the people of the town some degree of satisfaction. The people should remember, however, that when only 18 in 100 are in the high school, instead of nearly 33 (which would be the approximate normal percentage if all came through), there is a large loss all along the line. Efforts should always be made to get into the high school and keep there as nearly as possible all boys and girls of high-school age. Individual development and culture, the duties and responsibilities of citizenship, and the necessity of making a living and contributing to the Commonwealth—all alike demand universal high-school education. One of the most effective ways of doing this is to provide a program of studies which is rich in courses that appeal to the varied interests and meet the various needs of adolescent boys and girls. This phase of the school problem is discussed in another section of this report.

HOW DO COLLEGE ENTRANCE REQUIREMENTS AFFECT THE SCHOOL?

In common with most New England high schools and with many outside of New England, this school spends a larger proportion of its effort on college preparation than is justified. If all who entered the college preparatory curriculum came through successfully and entered college the disproportionate emphasis on college preparatory work could be successfully defended. The facts, however, do not justify such emphasis. The tables following show what small fractions of the pupils remain to graduate from the college preparatory courses, and how few of these graduates actually enter college. Sixteen out of fifty seniors are in the college preparatory courses. These represent a selection of 16 out of 151 pupils who started in as ninth graders four years before, or 10.6 per cent. Not more than one pupil in eight or nine comes through the school prepared for college, and not all of these actually enter college. Does not this fact suggest that greater proportional effort should be made to meet the needs of the seven out of eight who will never go to college?

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[1] Rep. of the U. S. Commis. of Educ., 1917, Table 2, p. 23.

For the overemphasis given to college preparatory work, the colleges which dominate the high-school situation in New England through their entrance requirements are largely responsible. For years the officials who administer these requirements have shaped them according to the demands of convenience in administration from the standpoint of the college official. In every community, on the other hand, are a few people who are much more interested in obtaining from the school free preparation of their children for certain colleges than they are in having the school function largely for the welfare of all the children of high school age in the community. The high schools are intended to be democratic institutions. They do not exist solely for the purpose of enabling a few boys and girls each year to get into college. Rather they exist for the training, in the things that are fundamental to good citizenship, of all the youth in the community who are approaching maturity and who can profit by what the high schools can offer.

On the one hand high-school officials and high-school teachers feel the pressure from college requirements, and not without reason, for in New England a school suffers serious loss of prestige if any of its pupils fail to pass entrance examinations, or to "make good" in college if they succeed in gaining entrance. On the other hand a few parents whose children do not succeed in college entrance examinations or in the pursuit of studies in college may unthinkingly and unjustly charge their children's failures against the teachers when the fault really lies with the children, or with themselves, because they have not trained the children to obedience and industry.

Two or three such parents can do more to destroy public confidence in a high school than 50 satisfied parents will do to establish and maintain it. Fear on the part of the teaching staff of this kind of criticism at home is another factor that helps the colleges to dominate detrimentally the high schools and their curriculum.

The rapid dwindling of the classes due to leaving school is strikingly shown by the next table, which also shows for the classes that graduated in 1918 and 1919 how very few of the pupils actually entered college.

Diminishing membership of high-school classes as they progress through the grades.[1]

Class entering in September.	Ninth grade.	Tenth grade.	Eleventh grade.	Twelfth grade.	"Fifth year."	Graduated.	Entered college.	Graduating in June.
1914	145	127	91	40	8	48	7	1918
1915	163	110	87	54	1	58	15	1919
1916	151	100	67	50	5	...	...	1920
1917	138	81	59	...	...	...	...	1921
1918	107	70	...	...	...	...	...	1922
1919	124	...	...	...	...	...	...	1923

[1] Compiled from reports of the superintendent of schools.

The falling off of the ninth grade enrollments during the past three years, as seen in the second vertical column, may be attributed partly to the fact that when the ninth elementary grade was discontinued pupils from both the eighth and ninth grades were promoted to high school; so the ninth grade high-school enrollment was larger then than usual.

The following table shows the numbers of boys and girls who are pursuing each of the five curriculums, distributed by grades:

Enrollment of high school by curriculums, grades, and sexes, September, 1919.

Curriculums.	Ninth grade.			Tenth grade.			Eleventh grade.			Twelfth grade.			All grades.			Post-graduate.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.
College	19	21	40	8	10	18	4	11	15	6	6	12	37	51	88	....	3	3
Technical	10	1	11	8	....	8	4	....	4	4	....	4	27	1	28	1	....	1
Commercial	16	29	45	7	17	24	3	12	15	3	11	14	29	69	98	....	....	....
General	6	16	22	6	9	15	5	14	19	3	14	17	20	54	74	....	1	1
Household arts	....	6	6	....	5	5	....	6	6	....	3	3	....	20	20	....	....	....
All curriculums	51	73	124	29	41	70	16	43	59	16	34	50	113	195	308	1	4	5

The most striking fact brought out by this table is the falling off in enrollment, in each curriculum excepting the "general," as we glance from left to right through the ascending scale of the grades. This is a condition which exists in nearly all schools, but it is much worse in some than in others. It is especially marked, in general as it is in Winchester, in passing from the ninth grade to the tenth. It may be due to one or all of three causes:

(*a*) Increase in the number of pupils received into a given grade from lower grades or from outside the system.

(*b*) "Piling up" in a given grade or retarded pupils, those who failed of promotion to the next higher grade, but who remain as "repeaters."

(*c*) Elimination of pupils who drop out of school before entering the next higher grade.

All three causes are operative in all grades in most schools, but usually with diminishing effects through the ascending grades. In Winchester, however, the first cause has not been operative during the past four years, as may be seen by reference to the preceding table. We must therefore attribute the falling off in enrollment to retardation by failures and to eliminations from school.

The first horizontal line of this table should be read as follows: The college preparatory curriculum enrolls 37.3 per cent of all the ninth grade boys, 28.8 per cent of all the ninth grade girls, and 32.2 per cent of all ninth grade pupils of both sexes. Also in this curriculum, the number of senior boys is 31.5 per cent of the number of ninth grade boys, the number of senior girls is 28.6 per cent of the number of ninth grade girls, and the number of both boys and girls in the senior class is 30 per cent of the number of both boys and girls in the ninth grade. The other four horizontal lines show similarly the corresponding ratios for each of the other curriculums. Since the ninth grade enrollment has changed but little in the past four years this ratio of seniors to ninth graders tells us approximately how well the different groups hold to their curriculum till the finish. The "general" curriculum appears to make the best showing: but reference to the following table shows that this is due to accessions of girls in the two upper years. The practice is followed to some extent of changing from the college preparatory or the commercial curriculum to the general, when unsuccessful in the required subjects of the former curriculums. In this there is danger that the general curriculum may become a recognized dumping ground for weak pupils instead of a well-planned course of training framed according to an intelligent educational policy and affording special lines of opportunity for pupils with various types of specialized interests and needs.

Proportion of boys and proportion of girls enrolled in each curriculum in the ninth grade, and percentage ratio of seniors to ninth graders in each curriculum.

Curriculums.	Percentage of each sex enrolled.			Ratio of seniors to ninth grade.		
	Boys.	Girls.	Total boys and girls.	Boys.	Girls.	Total boys and girls.
College preparatory	37.3	28.8	32.2	31.5	28.6	30.0
Technical preparatory	19.6	1.4	8.9	40.0	0.0	36.7
Commercial	31.4	40.2	36.3	18.7	38.0	31.3
General	11.8	21.9	17.8	50.0	87.5	77.1
Household arts	....	8.2	4.8	....	50.0	50.6

WHICH CURRICULUM ATTRACTS THE MOST PUPILS?

The two preceding tables show that the college and technical preparatory curriculums appeal most strongly to the boys, attracting 57 per cent of them, while these curriculums attract only 30 per cent of the girls. It also shows that the commercial curriculum, which is specially planned to turn out stenographers and bookkeepers, appeals most strongly to the girls, attracting to itself 40 per cent of the girls and 31 per cent of the boys. It also indicates (last three columns)that from one-half to two-thirds of the pupils drop out of each curriculum before reaching the senior class, and that while a few of these latter continue school work in the "general" curriculum, most of them leave school. The technical curriculum holds the boys best, or else it selects the most persistent; and the commercial does the same for the girls.

In connection with the college preparatory curriculums, it should be noted that the scope and character of the curriculum is probably not the primary factor inducing the students to pursue it. The primary reason why they choose it is that the colleges to which they intend to apply require them to be "prepred" in certain studies and by certain traditional methods; and they must take these courses in order to get this preparation whether the curriculum suits their native abilities and interests or not. The kind of education which these pupils must select, therefore, is not determined by a plan and policy of secondary education developed democratically within the school and community. It is determined mainly by authority emanating from the colleges, and this authority, whether so intended by them or not, is autocratic. Subservience to this authority by parents who are willing to submit their children to the arbitrary entrance conditions of certain favored colleges, rather than sending them to others whose views of secondary education admit of a broader and more liberal type of preparation, tends to increase the pressure of these autocratic requirements on the school.

This school is probably typical of many others in New England in that it is forced by external pressure to be more subservient to traditional college requirements than is consistent with the development of a real policy of its own in secondary education.

It would be well for secondary education in New England if the leaders in high-school education and the professors of education in these colleges would get together and outline a policy as to entrance requirements for these institutions which would allow the high schools larger liberty of internal development for the benefit of all their pupils. It would be healthier for both colleges and high schools if college educators would look beyond the entrance machinery set up for mere administrative convenience and would begin to interest themselves more in the broader aims and purposes of secondary education and the best means of realizing these aims.

Finally, in Winchester only 7 pupils out of 145 who entered high school in 1914 entered college in 1918, and only 15 out of 163 who entered high school in 1915 entered college in 1919. If, as is quite probable, this condition is typical of high schools in New England towns and small cities, it would be quite worthy of the abilities of the best New England college professors and schoolmen to consider what the other 138 entrants of 1914 and the other 148 entrants of 1915 were getting out of the high school that was worth while to them. Either the college preparatory curriculum should dominate the high school to a much smaller extent, or else it should be permitted to be reconstructed so that it would have more intrinsic value and greater holding power for the 90 to 95 per cent of pupils who start on it but never reach the college doors.

WHAT OF THE PUPILS FROM THE HUMAN AND SOCIAL STANDPOINT?

Turning from pupil statistics to the young people themselves, we find here in the Winchester high school a body of healthy and normal boys and girls rather more homogeneous, and apparently with a somewhat higher average of intelligence and initiative, than student bodies in many cities of the size of Winchester the country over. In general we find their attitude toward their work and their teachers to be good, and their outlook on life to be sound and sensible. Their general information seems to be well up to the average or better, and their preparation for their lessons averaged well. Their success in the tests that were given was good, their median scores being above the tentative standards corresponding to the tests. Their interest in problems and thought questions was particularly noticeable; and when given a chance in discussion they entered into it with zest and enthusiasm. It was always easy to appeal successfully to their idealism and to secure their cooperation. This was particularly noticeable in administering the tests. Altogether they seemed to us a body of youth who presented a strong appeal and challenge to the best efforts of their teachers.

Opinions have reached the commission to the effect that the morale of the high-school pupils has not been what it should be, and that the spirit of school patriotism which is so important for the success of every school as a socializing institution has been somewhat lacking. However this may have been in the past, there is no convincing evidence now that the students are deserving of such criticism. We have seen schools where the morale is distinctly higher than it seems to be here, and where the school spirit is evidently more coherent and enthusiastic. We believe that both morale and school patriotism can be improved and placed on a higher plane through the execution of an adminstrative policy consciously shaped toward this end. We believe that such a policy should be determined on and carried out, yet we think that the patrons of the school should be assured that the present morale of the student body in the high school is in no way seriously defective. However, it can and should be improved, and the public can materially assist in this improvement by refusing to repeat unverified items of criticism.

Nothing could be more influential in building up a fine morale among the pupils than a neighborly, cooperative attitude on the part of the parents toward the principal and teachers of the school. Parents should never criticize or belittle teachers in the presence of their children. Such a practice is all too common in families everywhere, and it undermines the pupils' pride in their schools and destroys their respect for their teachers. Parents should become acquainted with the teachers of their children and cooperate with them on a basis of mutual understanding and united endeavor for the good of their own children and the upbuilding of the school. With such cooperation all incidents or practices which seem to the parent to be open to criticism can be candidly discussed and equitably adjusted. The members of the survey commission can say without hesitation or reservations that the members of the high-school faculty are ladies and gentlemen of character, culture, and refinement, with whom anyone may be proud to associate and to whose care he may commit his children with entire confidence.

IS THE SCHOOL SUCCESSFUL IN PREPARING PUPILS FOR COLLEGE WORK?

Many of the comments unfavorable to the high school which are reported to have passed current in the community carry the idea that the students either fail in getting into college or do not attain success in college work when they succeed in getting in.

We have not been able to secure any data bearing on the number of applicants failing to get into college, although we have already called attention to the fact that the ratio of college entrants to graduates of the college preparatory curriculums is very small. The fact that only a small proportion of the latter do enter college, however, is not proof that only that proportion could have got in if they all had wanted to go. It more probably indicates that many pupils enroll in the college preparatory curriculums for reasons other than a strong and persistent desire to go to college.

Of those who actually apply, however, the number rejected must be relatively small, for the school has the certificate privilege with all colleges that accept candidates on certificate; and those colleges which do not do so are relatively few. Hence it is not probable that many pupils who work hard enough to attain graduation from the school fail to get into college.

The second criticism, that the students who enter college do not make good, is probably founded on hearsay and rumor rather than on fact. If the following figures from the records of the school are complete, they are convincing on this point and should silence this kind of vague and general criticism against the school. Even if they are not complete, they probably constitute a sufficiently large and fair sampling so that they may be taken as truly representative of the product of the school. From the table it may be seen that while the percentage of failures in college of Winchester graduates for the 4-year period 1911–1914 was 10 per cent of all courses entered, for the four years 1915–1918 it ranges from 3.6 per cent down to zero.

Record of Winchester High School graduates in first year of college.

	1911-1914	[1] 1915	1916	1917	[1] 1918
Number of pupils	44	6	18	7	7
Courses taken in college	243	30	86	34	[illegible]
Marks equivalent to credit or better	91	....	23	10	14
Marks equivalent to passing	123	....	61	23	12
Failure in certified subjects	9	0	2	1	0
Failures in subjects not certified	16	0	....	....	1
Ratio of all courses failed to all courses taken .... per cent	10.3	0	2.3	2.9	3.6

[1] Incomplete; includes all reports received to date.

Detail of failures by subjects.

	1911-1914	1915	1916	1917	1918
English	3	0	0	1	0
German	1	0	0	0	0
Mathematics	3	0	2	0	1
Latin	1	0	0	0	0
Chemistry	1	0	0	0	0

Marks received in 1919 by Winchester high-school graduates attending colleges which report back to the school.

Grades.	Maine.	Dartmouth.	Mount Holyoke.	Boston.	Total.
A. Excellent	....	1	....	....	1
B. Superior or good	....	7	3	3	13
C. Average or fair	4	5	8	3	[illegible]
D. Inferior or unsatisfactory	1	....	....	....	1
E. Failure or conditional	....	2	4	....	4
Total courses	5	15	15	6	[illegible]
Number of students	1	4	3	1	9

The accompanying table shows the actual marks for the first semester of 1919–20 reported from four colleges for nine pupils who entered college in 1919. Out of a total of 40 enrollments in various classes 6 marks of failure or condition were received. This does not reflect seriously on the quality of work done in the high school, since 14 out of the 41 marks, or more than a third, are in the two higher grades, either good or excellent, and half of them are fair or average.

Taking all these records into consideration, we judge that the rumors that have been current to the effect that the school has not prepared its pupils well for college is not proved. That the work and methods might be much improved is not to be doubted, yet many of the shortcomings of the school with reference to efficient teaching are due in no small measure to the restrictions that the colleges themselves place on the schools through their domination of the content and methods of instruction. Furthermore, the survey commission is convinced that recent changes that have been made in the organization of personnel and in the administration of the school have already resulted in improved teaching in some departments and give promise of eventuating in better work in all departments.

2. THE CURRICULUMS.

The survey commission recommends that a reorganization of the high-school curriculums be undertaken and carried forward as rapidly as the necessary changes can be formulated and fitted to the conditions of the school with administrative efficiency.

The principles on which such reorganization should be based are well recognized, and are as follows:

1. Each pupil should complete at least 15 or 16 units for graduation.

2. These 16 units should include two major sequences each consisting of three or four consecutive courses in a single subject or in closely related subjects. They should also contain two minor sequences of two-unit courses each. Furthermore, each pupil should be required to complete a minimum of two units of English, two of social studies (including American history and civics—or better, the problems of democracy—and taken in the eleventh or twelfth grade), one unit of mathematics, and one of science. These units may or may not be included in the major or minor sequences mentioned above.

The purpose of these specifications is to secure breadth of insight into the knowledges that are of greatest social and civic value, and at the same time to compel continuity of effort along the lines of the pupils' strongest ambitions and best aptitudes.

3. The subjects from which the major and minor sequences may be chosen are English, natural sciences, social studies (history, civics, economics, sociology), commercial studies, manual arts, household arts, and fine arts (including applied design), Latin, and modern foreign languages.

The curriculums now in use are shown in the following table:

HIGH SCHOOL COURSES OF STUDY (1919–20).

	FIRST YEAR. REQUIRED SUBJECTS.	Periods per week.	Diploma points.[1]	SECOND YEAR. REQUIRED SUBJECTS.	Periods per week.	Diploma points.	THIRD YEAR. REQUIRED SUBJECTS.	Periods per week.	Diploma points.	FOURTH YEAR.[2] REQUIRED SUBJECTS.	Periods per week.	Diploma points.
College entrance course.	English I	4	4	English II	4	4	English III	3	3	English IV	4	4
	Algebra	5	5	Plane geometry	5	5	Review mathematics	3	3	Review mathematics	2	2
	Latin I	5	5	Latin II	5	5	Latin III	5	5	Latin IV	5	5
	Ancient history	5	5	French I or German I	5	5	French II or German II	5	5	French III or German III	5	5
							French I or German I	5	5	French II or German II.		
							or Chemistry	7	5	or American history	5	5
										or Physics	7	5
Technical course.	English	4	4	English	4	4	English	3	3	English	4	4
	Algebra	5	5	Geometry	5	5	Review mathematics	3	3	Review mathematics	2	2
	Science I	5	5	French I	5	5	French II	5	5	Physics	7	5
	Ancient history	5	5	Biology	5	5	German I	5	5	American history	5	5
	or Latin I	5	5	or Latin II	5	5	Solid geometry	2	2	German II	5	5
Commercial course.	Community civics	3	3	English II	4	4	English III	3	3	English IV	4	4
	English I	4	4	Commercial correspondence	2	2	Business English	2	2	Current history IV	2	2
	Current history	2	2	Current history II	2	2	Current history III	2	2	Typewriting II	5	2
	Commercial arithmetic	3	3	Bookkeeping II	5	5	Typewriting I	5	3	Stenography II	5	5
	Bookkeeping I	5	5	Typewriting	2	1	Stenography I	5	5	Business and office methods	2	2
				Stenography	2	2						
Household arts course.	English I	4	4	English II	4	4	English III	3	3	English IV	4	4
	Current history I	2	2	Current history II	2	2	Current history III	2	2	Current history IV	2	2
	Science I	5	5	Science II	5	5	Chemistry	7	5	Household arts II	7	5
	Cooking I	6	3	Cooking II	4	2	Household arts I	7	5	Dressmaking II	6	3
	Sewing I	4	2	Sewing II	6	3	Dressmaking I	6	3	Millinery	4	2
	Drawing I	2	2	Drawing II	2	2						
General course.	English I	4	4	English II	4	4	English III	3	3	English IV	4	4
	Science I	5	5	Science II or Foreign language.	5	5	English history	5	5	American history	5	5
Five-year course.	English I	4	4	English II	4	4	English III	3	3	English IV	4	4
	Algebra	5	5	Geometry	5	5	Review mathematics	3	3	Review mathematics	2	2
	Latin	5	5	Latin II	5	5	Latin III	5	5	Latin IV	5	5
							Modern language I	5	5	Modern language II[1]	5	5

	ELECTIVES.			ELECTIVES.			ELECTIVES.			ELECTIVES.		
All courses.	Chorus	1	½	Harmony and theory II[3]	2	2	Mechanical drawing III	2	2	Mechanical drawing IV	2	2
	Harmonyand theory I[3]	2	2	Mechanical drawing II	2	2	Arts and crafts III	2	2	Freehand drawing IV	2	2
	Mechanical drawing I[3]	2	2	Freehand drawing II	2	2	Freehand drawing III	2	2	Arts and crafts IV	2	2
	Freehand drawing I	2	2	Arts and crafts II	2	2	Cooking III	2	1	Cooking IV	2	1
	Arts and crafts I[3]	2	2	Cooking II	2	1	Spanish II	5	5	Office work	10	5
	Cooking I	2	1	Sewing II	2	1	Sewing	2	1	Spanish III	5	5
	Sewing I	2	1	Manual training II[3]	2	1	Manual training	2	1	Sewing	2	1
	Physical training	2	1	Spanish I	5	5				Manual training	2	1
	Manual training I[3]	2	1	European history	5	5				Economics	5	5
	Biology	5	5									

[1] A "point" is the equivalent of one prepared recitation per day for one year, hence 4 points are equivalent to 1 unit; 72 points (equal to 18 units) are required for graduation.

[2] Fifth year of "five-year course" includes ancient or American history, 5-5; modern language, 5-5; chemistry or physics, 7-5; review of English and Latin.

[3] Not offered this year.

It will be seen that the college-entrance curriculum requires English, Latin, college-preparatory mathematics, one modern foreign language, and ancient history. The pupil has no choice of anything else whatever until the third year, when he may at his option take a third foreign language or chemistry, and in the fourth year continue with his third foreign language or choose American history or physics.

However satisfactory this arrangement may or may not be to the officials who are responsible for the administration of college-entrance requirements, the poverty in useful content to which these preparatory pupils are condemned by it during their most important and impressionable formative period must seem pitiful to the thinking man on the street, no less than to the modern and progressive student of secondary education. If these pupils want to study live civic problems they can not do so, but must take ancient history instead; and if they want science they must be content with the conventional college-preparatory brand of chemistry and the "forty sacred experiments" in physics. Fortunately they have a teacher in physics who encourages them to experiment "on their own," with projects outside the sacred forty; but if they want to have this opportunity, they must forego the study of their country's history and its big imminent problems. To anyone who is in the habit of getting below the surface in thinking on educational problems, this must seem nothing short of tragical. The children of Winchester, all unconsciously, perhaps, to the community, are being robbed of their birthright as American citizens. A careful analysis of the other curriculums will show that these are no more consistently conceived.

BASIS FOR REORGANIZED CURRICULUMS.

As a guide in the work of setting up something better, the survey commission recommends that curriculums be offered to meet the needs of different groups which will include all the pupils:

1. Those preparing for colleges and technical schools—a college-preparatory curriculum.
2. Those who intend entering commercial occupations before or after graduation from high school—a commercial curriculum.
3. Those girls who do not expect to enter college or business, and who therefore need a well-balanced curriculum in preparation for life as home makers and intelligent women citizens—a home economics curriculum.
4. Those boys who expect after leaving high school to go directly into occupations on the production side of industry—an industrial curriculum.

Curriculums embodying the foregoing principles, and having adequate flexibility, are presented as representative of what is needed for children having the varied interests and occupational opportunities afforded by the diversified commerce and industries centering in and around Boston.

It will be said at once that Winchester has a home economics curriculum and that the girls are not attracted by it; but the commission is of the opinion that the reason for the failure lies in the curriculum as it now is and in lack on the part of the community of appreciation for the home economics idea, and not in the girls themselves. If a richer curriculum be provided, and if its advantages as affording a broad, all-round education for girls be once understood by the people, we believe that it will turn out to be one of the most popular curriculums in the school.

THE COLLEGE PREPARATORY CURRICULUM.

Study sequences.	Ninth grade.	Tenth grade.	Eleventh grade.	Twelfth grade.
Foreign language.	I	II	III	IV
English	I	II	III	IV
Mathematics	Algebra.	Plane geometry.	Solid geometry ½. Advanced algebra ½; or Physics.	Chemistry IV or mathematics III or physics III.
Natural science	Civic biology or	General geography or		
Social studies	Advanced community civics.	Ancient and medieval history.	Modern history.	American history or problems of democracy.
Physical training	I	II	III	IV
Fine arts	(1)	(1)	(1)	(1)

[1] Music or art or both may be elected for three periods per week.

Foreign-language sequence may be four units of Latin or French or Spanish, or two of one and two of another.

Girls may take two years of household arts work instead of foreign language III and IV or instead of geography or history II and English, mathematics, or physics III, or they may take it as a part course elective instead of music or art for two or three periods per week, if with the approval of the principal. Boys may take two years of shopwork instead of foreign language III and IV, instead of geography or history II and English, mathematics or physics III, if with the approval of the principal.

THE COMMERCIAL CURRICULUM.

Studies.	Ninth grade.	Tenth grade.	Eleventh grade.	Twelfth grade.
Drawing and shopwork (boys). Household arts (girls).			I, II, or III or I or	II, III, or IV or II or
Music or art				
Language	English composition, spelling, punctuation, literature I.	English composition, rhetoric, literature II.	Foreign language I, or English composition and literature III, or	Foreign language II, or English composition and literature IV, or
Natural science	Civic biology or	General geography or	Physics.	Chemistry, agriculture, or botany, and forestry.
Social studies	Community civics (advanced).	Modern history.	American history	Problems of democracy.
Mathematical studies.	Commercial arithmetic and bookkeeping.	Bookkeeping and office practice.	Costs and contracts, salesmanship and advertising.	Auditing, banking, and finance insurance and investments.
Commercial studies.	Stenography and typewriting.	Stenography and typewriting.	Office and factory management, personnel work, elementary business law.	Elements of economics IV.
Physical training	I	II	III	IV

Music or art or mechanical drawing and shop work may be elected in the first and second years up to three periods per week; also in the third and fourth years if full courses in either of these subjects have not been chosen as indicated above.

THE HOME ECONOMICS CURRICULUM.

Studies.	Ninth grade.	Tenth grade.	Eleventh grade.	Twelfth grade.
Art	Drawing, color and design I.	Drawing, color and design II.	Drawing, color and design III or	Drawing, color and interior decoration IV or
English	Composition, spelling, punctuation, literature I.	Composition, rhetoric, literature II.	Composition, literature, history of literature III.	Composition, literature, history of literature IV or economics IV.
Social studies	Civics or	Modern history or	American history	Problems of democracy.
Natural sciences	Civic biology	General geography	Household physics and chemistry.	Dietetics, care and feeding of children, first aid, and nursing.
Home economics	Foods and cooking (3) I, textiles and sewing (2).	Foods, cooking, and sewing (2) textiles and sewing (3) II.	Dressmaking and millinery III.	Household management, housewifery, budgets and accounts, laundry IV.
Physical training	I	II	III	IV

Music may be taken each year as an elective fractional unit up to three periods per week. Two, three, or four units of Latin or a modern language; or one, two, three, or four full units of music; or one, two, or three units of mathematics may be elected instead of art, if with the formal approval of the principal.

THE INDUSTRIAL CURRICULUM.

Studies.	Ninth grade.	Tenth grade.	Eleventh grade.	Twelfth grade.
Drawing and art	....	....	Freehand drawing, color and design I or	Freehand drawing, color and design II, or prospective and projection II or
Language	English composition, spelling, punctuation, literature.	English composition, rhetoric, literature.	Foreign language I, or English composition and literature III or	Foreign language II, or English composition and literature IV or
Mathematics	Algebra (5), or algebra (2), geometry (2), graphs, and geometrical construction.	Plane and solid geometry (5), or algebra (2), geometry (2), graphs, and geometrical constructions (1).	Advanced algebra, trigonometry, and elementary coordinate geometry.	
Social studies	Civics or	Modern history or	American history	Problems of democracy.
Natural science	Civic biology	General geography	Physics	Chemistry.
Industrial practice	Mechanical drawing and woodwork.	Drawing and cabinetmaking, wood turning and pattern making, bench-metal work or sheet-metal work.	Forge work, foundry practice, or drawing and machine shop.	Machine drawing and machine-shop.
Physical training	I	II	III	IV

Art or music may be taken each year as an additional part unit elective up to three periods per week, excepting art in the third or fourth year, when full unit art courses have been chosen as electives.

PROPOSED CURRICULUMS.

Because of space limitations, these curriculums are here presented without argument or detailed explanation. The character, content, and educational values of the various sequences of courses and the arguments for the curriculums as constructed are quite fully set forth in the report on the public-school system of Memphis, Tenn., United States Bureau of Education Bulletin, 1919, No. 50, part 2, Chapter II (Government Printing Office, Washington, D. C.). We recommend that the administration and teaching staff of the high school make a careful study of this discussion with reference to setting up similar curriculums in Winchester. Assuming that the school committee is willing to provide the equipment and instruction for a four-year sequence in shopwork, the problem to be solved is, How much of the proposed flexibility of these curriculums can be realized in a workable time schedule without conflicts and without producing many very small recitation sections as to carry the per pupil costs beyond the limits of reasonable liberality? Rich and flexible curriculums usually cost more than such purely formal ones as now exist in Winchester; but manifestly they are worth more. The ultimate question is not so much, "Is the cost high?" as "Is it worth what it costs and can the community pay?"

The commercial curriculum is so planned as to give the maximum of useful and available training to a considerable proportion of pupils who must drop out at the end of the second year, or tenth grade. For such pupils it gives as good prevocational training and outlook as any course is likely to give them. For them, in such a short period no real vocational training can be effectively attempted.

Typewriting should be begun in the junior high school in the seventh or eighth grade by those pupils who have attained a business standard of proficiency in penmanship. In the ninth and tenth grades for prevocational training, and in the eleventh and twelfth for vocational training, stenography and typewriting practice should go on together. What is taken down in stenographic notes should in most cases be written out directly on the typewriter.

Putting these subjects in the ninth and tenth grades is no untried experiment. They have been successfully taught in those grades in schools of standing known to members of the commission for more than 25 years. The commission favors the expansion of the art sequence to cover a major of four years' work in drawing, color, and design, with differentiation in the two upper years into projects of specialized sorts, such as interior decoration, costume design, advertising poster work, and so on. Such a sequence should appeal strongly to many pupils in a community near Boston, where pure and applied art interests are so well developed and established.

Similarly, we favor a four-year major sequence in music, credit for parts of which may be obtained by outside study and practice under the instruction of approved professional music teachers and under the direct supervision of the music supervisor of the schools.

These sequences and also part courses of two or three days per week running through the four years should be open to all pupils under the proper restrictions.

3. THE TEACHERS AND THEIR WORK.

HOW WELL ARE THE TEACHERS TRAINED?

All the teachers have had good training. As will be seen by inspecting the following table, only 4 out of 20 are not college graduates. One of these is a substitute, teaching commercial subjects and has had two years' training in commercial subjects beyond high school and two years' practical experience as an accountant. Another is the art teacher, who has had seven years' training in art schools, with study and travel abroad. The third is a domestic science teacher who has had two years of college work, together with summer and extension courses in good institutions. The fourth is the girls' physical director, who is a graduate of the Boston School of Physical Education.

Those teachers who hold degrees received them from the following colleges: Bates 1, Boston 1, Brown 1, Colby 2, Harvard 1, Howard 1, University of Maine 1, Mount Holyoke 1, Radcliffe 3, Simmons 1, Smith 2, and Tufts 2. This list shows a wide distribution of New England colleges, which is well for the school, as it serves to bring into it educational viewpoints from many different centers.

The status of these teachers with respect to their special pedagogical training, expressed in the number of semester hours work in psychology, principles of education, and other special studies in the science and art of education, is as follows:

One teacher reports 158 semester hours, one 150, one 35, one 12, two 10, one 6, one 5, and two 4. Nine of the 19 teachers reporting have had no special pedagogical training.

The minimum standard required for schools accredited by the North Central Association of Colleges and Secondary Schools is that all teachers of academic subjects shall be graduates with a bachelor's degree from a standard college or a four-year normal course, including special training in the subject matter of the studies they are teaching and 11 semester hours of special training in psychology, and other studies in pedagogy and educational theory and practice.

As to degrees and professional training of teachers, Winchester may fairly be compared with 559 schools accredited by the North

Central Association having enrollment of from 151 to 450 pupils. For these schools in 1917 the average number of teachers not new to the schools who were not college graduates was 11.76 per cent, and the corresponding average for teachers new in the schools was 6.09 per cent.[2] All the teachers of academic subjects in the Winchester high school are college graduates excepting one, who teaches community civics half time. This makes the ratio for Winchester of nongraduate academic teachers to the whole number of academic teachers as ½ to 13, or 3.9 per cent, as compared with from 6 to 12 per cent for the North Central accredited schools. This school, therefore, is found to be well in advance, when compared with similar schools in the Middle West, with respect to the college training had by its teachers.

Distribution of high-school teachers according to training and college degrees.

Total years of training above elementary school.	Number of teachers having each amount.	Teachers with no degree.	With bachelor's degree	With master's degree.
Less than 6	0			
6 but less than 7	3	3		
7 but less than 8	2	1	1	
8 but less than 9	4		3	1
9 but less than 10	8		7	1
10 or more	3		1	2
Total	20	4	12	4

With reference to special pedagogical training for the 559 North Central schools of medium size, 10.10 per cent of the new academic teachers and 13.20 per cent of the not new academic teachers, in 1917, had not had as much as 11 semester hours of such training. The corresponding rates for Winchester teachers of academic subject is 10/13, or 76.9 per cent. It is clear that both on the basis of their individual records and on that of comparison with academic teacher of medium-sized North Central accredited schools, the teachers c Winchester high school as a body are relatively very deficient i special pedagogical training. It is probable that if data were hand by means of which they might be compared with teachers eastern territory, their records in this particular would not be deficient when compared with the latter. New England school thorities generally may be somewhat more insistent that tl teachers be college graduates than are those of the North Cent States, but the requirement for special pedagogical training r generally far less attention in the East than in the West. In this important factor of teachers' qualifications the East appears to be behind the times. Several of the Central and Western States require from 15 to 30 semester hours of pedagogical training as a prerequisite for entrance into examinations for a teacher's license. All school boards should require a minimum of pedagogical training as a condition of employment, and they should make it a factor in determining promotions and salary advances.

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[2] Davis, C. O. Acredited Secondary Schools of the North Central Associ 1919, No. 45, U. S. Bu. of Educ., pp. 49–52.

Two important factors of professional growth in teachers are the reading of professional literature and training during service through the agency of teachers' reading circles, extension courses, and summer courses. As to professional reading, the Winchester teachers were asked to name the professional books and magazines read during the last year. The replies are as follows: Two reported no such reading, five reported 1 title, four 2 titles, three 3 titles, two 4 tiles, one 6 titles, one 7 titles, and one 8 titles. For the most part, the titles named were of books and magazines that discuss current educational problems from the viewpoint of modern educational theory. This makes a very good showing for nearly half the teachers and should incite the remainder to do better. Every professional person should make some attempt to keep up with the technical literature of his or her special branch of the profession. Engineers, physicians, dentists, lawyers, and college teachers consider this essential, and do it as a matter of course. Why should not high-school and elementary teachers do this also?

The teachers were asked to name the colleges in which they had taken extension and summer courses within the past three years. Six teachers named none. Simmons College was named by 3, Harvard by 2, University of Maine, Boston University, and North Eastern College each by 1. One teacher reported three—Teachers' College of Columbia University, Simmons College, and Boston University. One reported having taken two business courses, another attended two foreign-language schools, another was taking private lessons in a foreign language. Hence 12 out of 18 teachers, or 67 per cent of them, had taken some summer or extension-work or other professional training during the past three years, which is a creditable showing.

ARE THE TEACHERS EXPERIENCED?

The next table shows (column 2) the number of teachers in the Winchester High School who have had various amounts of total experience (indicated by the numbers in column 1). Similarly, it shows in columns 3 and 4, respectively, the numbers who have had various amounts of high-school experience and various amounts of experience in the Winchester High School.

This table tells us that the teachers are all experienced, only one having less than four years' experience and none less than three. One teacher is in her first year of high-school experience, but all the others have been in high-school work three years or more. Five are new in the school this year, and three more are in their second year's service in this school. This is not a large proportion of new teachers in these days when so many teachers are leaving individual schools or leaving the profession for better-paid positions.

The table shows that the situation is good in respect to the stability and solidarity of the school staff. Such stability makes for unity of aims and school policies. It is always good for a school to hold its teachers for a long time, unless it is found that they have stopped growing professionally and are "going to seed." The latter is most emphatically not true of the teachers of long experience in this school. Most of these could profit greatly by further professional study of various phases of their work; but they are professionally open-minded, and listen readily to progressive suggestions.

Distribution of high-school teachers by years of total experience, experience in high schools, and experience in Winchester High School.

Number of years' experience in teaching.	Number of teachers having each amount.			Number of years' experience in teaching.	Number of teachers having each amount.		
	Total.	In high schools.	In this school.		Total.	In high schools.	In this school.
1	0	2	5	10	0	0	0
2	0	0	3	11	0	0	1
3	2	1	3	12	1	1	0
4	4	4	2	13	2	1	1
5	0	....	1	14	1	1	0
6	1	1	1	15-29	6	6	1
7	1	2	1				
8	1	0	0	Median	10½	8½	2⅔
9	1	2	1	Total	20	20	20

ARE THE TEACHERS OVERLOADED?

An important factor affecting the teaching work of a school is the total duty load of the teacher, or the total amount of work of all kinds that he or she is expected to do. This includes teaching, library and study-room supervision, special direction of study, individual help outside the classroom, committee or clerical work, conferences with parents, and so on.

Good administration requires that duty loads should be equitably distributed, and that no teacher's burden should be too heavy; for an overworked teacher can not long continue to give efficient and inspiring instruction. Furthermore, no body of teachers will do good teamwork if there are glaring inequalities in their burdens, unless those who are able to carry the heavy burdens are rewarded with correspondingly greater compensation. If the loads vary somewhat widely, and if this variation is necessary, then other things being equal the teachers carrying the heaviest loads of work and responsibility should receive the highest salaries.

It is very difficult to get an accurate quantitative measure of the total duty of any teacher, because many teachers do much work outside the classroom which varies so greatly from time to time in amount and arduousness that they can not estimate it accurately. However, the data contained in the next table, compiled from definite information given by the teachers and principal, afford considerable illuminating information as to the distribution of work among the teachers.

High-school teachers' assignments of work and annual salaries, 1919–20.

Teachers.	Subjects.	Total periods per week.	Total pupils enrolled.	Teaching load.	Library and study-room load.	Total duty load.	Annual salary.
No. 1	Spanish	20	46	230	30	245	$1,[illegible]
No. 2[1]	Mathematics	20	99	495			
	Gymnasium	6	135	135	0	630	2,[illegible]
No. 3	Art (¾ time)	12	73	219	0	219	1,1[illegible]
No. 4	Bookkeeping and typewriting	21	104	370	30	385	[illegible]
No. 5[1]	History	25	124	620	200	720	2,[illegible]
No. 6	Household arts and sewing (½ time).	7	25	101	90	191	1,[illegible]
No. 7	French	25	96	480	125	543	1,[illegible]
No. 8[1]	Bookkeeping and community civics.	26	84	568	60	618	1,[illegible]
No. 9	Physics and chemistry	19	39	229	140	299	1,[illegible]
No. 10	Latin and French	30	126	630	0	630	1,[illegible]
No. 11	Upper mathematics (⅓ time)	9	53	128	0	128	1,[illegible]
No. 12	English, economics, and psychology.	19	136	427	450	652	1,[illegible]
No. 13	Gymnasium (½ time)	13	163	326	0	326	1,[illegible]
No. 14	English	20	98	392	230	507	1,[illegible]
No. 15[1]	General science and community civics.	17	80	349			
	Gymnasium (athletic coach)	2	16	32	0	381	2,[illegible]
No. 16	English and current history	16	150	344	165	427	1,[illegible]
No. 17	Stenography	14	52	173	280	313	1,[illegible]
No. 18	English	20	123	492	158	650	1,[illegible]
No. 19	Biology and cooking (¾ time)	14	46	581	45	636	1,[illegible]

[1] Men teachers.

Column 3 of the preceding table shows the total number of periods per week during which each teacher gives class and laboratory instruction. Column 4 tells the number of different pupils that each teacher meets during each week. Column 5 gives the weekly teaching load for each. This is expressed in pupil-periods and is obtained by multiplying together for each recitation section the number of pupils in the section and the number of periods per week that the section meets and then adding together the products corresponding to all the sections. For example, if Mr. A has 5 sections, each for 5 periods per week, and the numbers of pupils in the section are 25, 24, 26, 23, and 27, his teaching load is 25×5+24×5+26×5+23×5+27×5=625 pupil-periods. This is a fair weekly teaching load, provided that not much of the other kinds of work is required. When more work of other kinds is required, the teaching load should be proportionately lightened. The library and study-room load is similarly obtained. Here, however, the number of pupils supervised[3] at a given period varies from day to day, and the estimated average attendance was used.

The total regular-duty load, column 5, was obtained by adding one-half the study-room and library load to the teching load. This is done on the arbitrary assumption that such duty, requiring no outside preparation, is equivalent to one-half that involved in handling an equal number of pupils in a classroom for the same time. All the teachers in this school are expected to remain for a half hour after the close of each session to give individual help to pupils needing it, but this work has not been included in the total load, because the amount of help given and the number of pupils aided vary so much that trustworthy estimates could not be made. Probably 10 per cent added to the load of each teacher would cover it fairly; and if comparisons were to be made with other schools, probably this per cent should be added to each teacher's load. Also, since the period here is 45 minutes or ¾ of an hour, if for purposes of comparison with other schools it is desired to reduce these loads to pupil-hours, the number of pupil-periods should in each case be further corrected by multiplying it by ¾. This distribution table plainly reveals several important facts:

1. None of the Winchester high-school teachers giving full time to high-school work is overburdened, and the duty load for half of them is light as compared with that in city high schools generally. The median is 543, a very reasonable load, while for the lowest three teachers the load is below 300, or very light.

2. There is a very wide range of variation in the duty loads of these teachers.

3. There is no relation between duty loads and the corresponding salaries.

Nearly all the cases of abnormally light loads are caused by the small enrollments in certain subjects, notably French, Spanish, bookkeeping, typewriting, stenography, sewing, and cooking. Column 2 shows only one case of a full-time teacher who teaches during fewer than 19 periods per week; so it is clear that with this exception the very light loads are not due to this latter cause. In this one case the teacher was given light work because she was nearing a breakdown. She is a remarkably energetic and skillful teacher of her subject, and the policy of giving her a light assignment in order that she may regain her normal physical strength is not only fair and generous to her, but also plainly to the advantage of the pupils. The maximum duty load permitted in accredited high schools by the accrediting standards of the North Central Association of Colleges and Secondary Schools is 35 periods per week, with a maximum of six recitation periods and one study period per day, and with not more than 30 pupils in a recitation or laboratory section, and no limit to the number of pupils in a study section. It is the large schools in the large, growing cities like Chicago and St. Paul, where the growth in population is continually outstripping the provisions for schooling, that have forced the association to allow such heavy loads while strongly disapproving them. Assuming that an average study section in such a school has an attendance of 60, and that a teacher is loaded to the limit, as many of them are, his load would be

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[3] Study-room duty here means maintaining quiet and order only. There is no organized plan of "directed study" for the whole school, but there is an organized plan for giving individual help to those who get behind in their work.

30 pupils×30 periods+$\frac{1}{2}$ (60 pupils×5 periods)=1,050 pupil-periods.

This North Central limit of 1,050 pupil-periods is undoubtedly too high. It should be as low as 900. Even this load, however, is not required of any Winchester high-school teacher, the heaviest load being 720 pupil-periods. This, with say 10 per cent added for the detention period, teachers' meetings, etc., gives a possible maximum for this teacher of 792, a figure still 11 per cent below that which the survey commission regards as a reasonable maximum limit.

The commission, however, does not recommend that each teacher should be loaded to the limit. On the contrary, it commends the policy of assigning loads between 450 and 750, according to kinds and types of work, and according to administrative necessities; and it also recognizes that in some cases, as in the one mentioned above, much lighter loads may at times be entirely proper.

From the preceding table it appears that with reference to their total duty loads the full-time high-school teachers are distributed as follows:

Relation of duty loads to salary.

Teachers' regular duty-loads expressed in pupil-periods.	Number of teachers having each amount.	Corresponding salaries.
700-749	1	$2,300
650-699	2	$1,600, $1,600
600-649	3	$2,300, $1,500, $1,600
550-599	0	
500-549	2	$1,600, $1,600
450-499	0	
400-449	1	$1,600
350-399	1	$1,600
300-319	1	$1,600
250-299	1	$1,600
200-249	1	$1,600

The lack of any correspondence between loads and salaries is here quite apparent. It is a fair inference from this array of facts that both the conditions back of the teaching loads and the methods of determining compensation need careful study, with reference to some sort of consistent readjustments. While the teaching load should not be the only factor in fixing the salary of a teacher, yet it should be taken into account.

WHAT DO THE PART-TIME TEACHERS DO?

The part-time teacher, designated as No. 3, gives three-fifths of her time, or three days per week, to the Winchester High School, and the remainder is spent outside the Winchester system. No. 4 teaches 7 periods a week in the high school, supervises the study room 2 periods, directs the operation of the cafeteria 5 periods, and teaches in the elementary grades 13 periods. We estimate her load of elementary teaching at approximately 200 pupil periods, but the work is probably much more arduous and difficult than the same amount of high-school work. The cafeteria work involves the full responsibility for a business of $5,000 a year, and includes the direction of 1 paid worker and 16 student assistants.

No. 11, in addition to her teaching load, is study coach, dean of girls, and general assistant to the principal. Her service to the school is very efficient and valuable.

No. 13 gives half her time to teaching and supervision of physical training in the elementary schools. Her teaching load there figures out approximately 335 pupil periods, which would give her a total load, high and elementary, of 661. However, 335 for her elementary work is probably far too small a measure of the actual work and strain that she carries. She visits nine different elementary schools and gives instruction for 20 minutes once every two weeks to each of 40 classes, varying in number between 20 and 49 pupils, and enrolling a total of 1,342 pupils.

Besides this she does a large amount of work which we have not been able to estimate quantitatively. She spends eight hours per week coaching teams, half an hour per week with a class in pupil leadership, holds occasional meetings with the grade teachers, and spends considerable time taking and recording physical measurements of the girls. She recently staged a splendid athletic exhibition which must have required a great deal of time, energy, and organizing ability to carry through so successfully. We believe that this teacher is overworked. Also we believe that the needs of the pupils demand that she should give her whole time either to the high school or to the elementary work, and that another teacher should be assigned for full time to develop the work in the department relinquished by her. This would increase the efficiency in both departments. What is needed is a physical teacher in each of the new large schools.

No. 15 is athletic coach for the boys in addition to his teaching load of science, civics, and physical training.

No. 19 gives approximately one-third of her time to the elementary grades in addition to her 626 pupil periods in the high school.

This review of the work assignment of the teachers shows that the administration with a very few exceptions has been liberal in its demands on the time and energy of the teachers, and therefore has a right to expect that they put much energy and enthusiasm into their classroom work, that they be generous in their efforts in giving individual help and attention to the pupils most in need of it, and that they devote much of their time outside of school to reading, study, and professional growth and to community welfare. We believe that most, if not all, the teachers are willing to do so, but that they need more definite leadership and help in organization in order to accomplish greater results in these fields of effort.

ARE THE CLASSES WELL ORGANIZED AS TO SIZE?

It is possible that a careful study of individual problems of organization would disclose means of securing a more even distribution of teaching loads than now exists. Such a study would naturally turn first to a consideration of the sizes of recitation sections.

The next table shows the size of different sections.

Numbers of recitation sections in each subject of the sizes indicated, Winchester High School, 1919–20.

Subjects.	Number of pupils in recitation sections.									Total.
	0–5	6–10	11–15	16–20	21–25	26–30	31–35	36–40	41 or more.	
Spanish		3		1						4
Algebra				1		1		1		3
Geometry and trigonometry	1	1	1	1	1					5
Art			2		2					4
Bookkeeping			1	1	1		1			4
Typewriting			2	1		1				4
Stenography		1	2	1						4
History				2		3				5
Household arts	1		2							3
French			1	4		1				6
Biology				1	1					2
Civics			1	1	1					3
Physics		1								1
Chemistry		1			1					2
Latin			1	1	1	1	1			5
English			3	1	9	4				17
General science				1	2					3
Current history			2	1	1	2				6
Gymnasium		1		4	3	2	2		2	14
Economics and psychology						1				1
Total	2	8	18	22	23	16	4	1	2	96
Percentages of total number of schools.	2.1	8.3	18.8	22.8	23.9	16.7	4.2	1.0	2.1	100

This table reveals the location of the small and the very small sections. Twenty-eight sections out of 96, or 29 per cent of all, are undersized, having fewer than 16 pupils. Forty-five sections, or 47 per cent, are within the optimum range, enrolling between 15 and 26 pupils. Seven sections, or 7 per cent, are excessively large, enrolling more than 30 pupils. Of these last, two are gymnasium sections in which moderately large numbers ordinarily are not disadvantageous; but one is in first-year algebra, a subject in which no large sections should exist if it possibly can be avoided. The teacher of this particular group, though a capable and interesting instructor, and using for the most part very good methods, was unable at all times to hold the pupils to efficient work.

There are 10 excessively small sections enrolling fewer than 11 pupils each. These are in Spanish, solid geometry, stenography, cooking, physics, chemistry, and gymnasium. Such small classes should not exist in a school if there is any way to avoid them without sacrificing essential or specially important educational values or fundamental rights. They entail an inequitable distribution among the pupils of public funds in the form of teacher service, and also they do not furnish the social incentives to individual effort that larger groups afford. It is usually impossible, however, to avoid them entirely, and it is relatively more difficult to do so in a medium-sized or small high school than in a large one. Such small classes, nevertheless, should be carefully investigated. They are the principal cause of high cost of instruction per pupil. It is, therefore, quite proper with reference to any section for the principal to consider, first, whether it can be done away with through distributing the pupils, and second, if this can not be done, whether the advantage to the pupils is worth the cost to the community.

By way of illustration, suppose that a teacher whose salary is $1,500 per year is assigned a fourth-year French class with only 5 pupils, and that this class absorbs one-sixth of her time and effort. Each pupil in this class receives from the school board $50 for instruction in this one subject, while each pupil in a section in civics enrolling 25 pupils under otherwise equal conditions receives $10 for instruction in that subject. Is this fair? Are the pupils of this costly French class getting out of it something that is going to contribute five times as much to their economic and social and spiritual value as that which accrues to 5 pupils in the civics section? Is some important department in the school being deprived through lack of funds of essential maps or other equipment which the $250 that has been handed over to those 5 French pupils might have procured? Is it just as important to the town and the State that 5 pupils should put in a year translating two or three French stories or plays and learning the fine distinctions of the tenses in the subjunctive mode as that 25 pupils should be investigating the civic, economic, and vocational activities and conditions of their town and State? Perhaps so, but be the answers to these questions yes or no, such questions should be raised and settled with reference to every undersized class. Every possible effort, consistent with a broad and liberal program of education should be made to keep the membership of recitation sections within the optimum limits or as near them as is possible—that is, for most subjects, between 20 and 30. Every course of study in the program should be evaluated from the standpoint of its economic, social, civic, and spiritual worth to the community as a means of training its junior citizens in the best ways of individual living and cooperative effort for the common good.

Granted that a study can be shown to have undoubted value from this point of view, there are two ways in which the waste of small sections can sometimes be avoided that are seldom if ever considered, but which in the opinion of the survey commission should always be attempted. The first is by a revision of the curriculums that would both bring them into line with the best thought concerning the selections and sequences of studies, and would probably bring about, automatically, larger enrollment in the classes of such important subjects as civics, household arts, physics, chemistry, biology, economics, and history. The second is that of organized publicity within the school and community intended to set forth the advantages of certain studies, and the reasons why more pupils should pursue them. Why should only 8 boys and no girls be studying such an immensely important and interesting subject as physics? Why does chemistry, which lies at the foundations of practically every important industry, enroll only 6 boys and 23 girls? Why should not more than 51 girls and 22 boys out of 308 be studying drawing and applied art? A large majority of American girls marry or otherwise become the operators or managers of homes. Why, out of 195 girls in this school, should only 4 be studying the science and art of dietetics and cooking, and only 28 learning the arts of sewing and garment making? These practical subjects need be no less cultural than other subjects because they are practical; to-day as never before the world needs women who master them on an intellectual and scientific plane, as well as on the plane of manual skill. If the girls of Winchester and their parents were better informed as to the utility and cultural value of these subjects when properly organized in the curriculum and properly taught, the classes would be filled to overflowing.

ARE TOO MANY PUPILS FAILING AND DROPPING OUT OF SCHOOL?

One way of measuring the efficiency of the teaching staff of a school is to make a study and exhibit of the distribution of failures and eliminations. If all school subjects were equally attractive and equally difficult, and if no pupil failed or dropped out because he left town or because of other reasons wholly accidental, if all pupils were equally bright and equally inclined to work, and if all teachers had the same conception as to the meaning of the passing mark, this method would furnish a very satisfactory measure of the relative efficiencies of the individual teachers.

The absurdity of assuming it as a sole measure or even as the best measure is evident, however, from the statement just made. Nevertheless such a study is of value in any school.

Promotions, eliminations, and failures in the Winchester High School.

Subjects.	Teachers.	Pupils enrolled.	Pupils dropped.	Pupils remaining.	Pupils promoted.	Pupils promoted conditionally.	Pupils failed.	Pupils repeating subject in same grade this year.	Per cent of enrolled who were dropped.	Per cent of remaining who failed.	Per cent promoted of those enrolled.	Per cent of those enrolled who failed.	Per cent enrolled who were dropped or failed.
Bookkeeping and community civics	1	64	12	52	52	0	0	0	18.7	0.0	81.3	0.0	18.7
Algebra and geometry	2	100	7	93	82	3	8	3	7.0	8.6	82.0	8.0	15.0
Art	3	96	4	92	92	0	0	0	4.2	.0	95.8	.0	4.2
Bookkeeping, office, training, and typing	4	98	12	86	69	12	5	8	12.2	5.8	70.4	5.1	17.3
Latin	A	21	1	20	19	0	1	0	4.8	5.0	90.5	4.8	9.6
	B	22	4	18	18	0	0	0	18.2	.0	81.8	.0	18.2
Household management and dressmaking	6	27	1	26	26	0	0	0	3.7	.0	96.2	.0	3.7
Physics and chemistry	9	43	2	41	41	0	0	0	4.7	.0	95.3	.0	4.7
Mathematics	11a	43	3	40	37	0	3	0	7.0	7.5	86.0	7.0	14.0
	11b	55	0	55	39	0	16	0	.0	29.1	70.9	29.1	29.1
English and economics	12	153	16	137	132	0	5	6	10.5	3.7	86.3	3.3	13.8
History	C	122	11	111	102	0	9	6	9.0	8.1	83.6	7.4	16.4
General English	14	54	5	49	46	1	2	1	9.3	4.1	85.2	3.7	13.0
Community civics and general science	15	61	11	50	43	0	7	1	18.0	14.0	70.5	11.5	29.5
Current history and general English	16	137	11	126	110	0	16	4	8.0	12.7	80.3	11.7	19.7
Commercial arithmetic and stenography	17	94	13	81	70	1	10	3	13.8	12.3	74.5	1.1	14.9
German and Spanish	D	55	5	50	45	0	5	4	9.1	10.0	81.8	9.1	18.2
College English	18	112	10	102	93	0	9	6	8.9	8.8	83.1	8.[illegible]	16.9
Cooking, sewing, and biology	19	40	5	35	34	1	0	0	12.5	.0	85.0	.0	12.5
Total	......	1,397	133	1,264	1,150	18	96	42	9.5	7.6	82.4	6.9	16.4

This table, compiled from returns made on blanks furnished the individual teachers, tells for each of them how many pupils were enrolled in his or her classes last year, how many and what per cent of these dropped out of school, how many and what per cent of these failed of promotion, how many were promoted conditionally and how many and what per cent were promoted unconditionally. This table is useful as a diagnostic sheet. It tells, almost at a glance (columns 10, 12, 13, and 14), the individual teachers whose class work should receive special study in order to find the causes for unusually large or unusually small percentages of failures or eliminations from their classes. For example, we learn from the bottom line that, of the 1,397 individual enrollments in all the 96 recitation sections, 133, or 9.5 per cent, dropped out of their classes before the end of the year; and of those remaining, 96, or 7.6 per cent, failed of promotion. These failures constituted 6.9 per cent of the total class enrollments, and failures and eliminations together constitute 16.4 per cent of it. This is not by any means a bad record for the school as a whole. Unfortunately again we have no country-wide norms for comparison, but the record of 82.4 per cent unconditional promotions and only 16.4 per cent failures and eliminations is distinctly good compared with the few schools whose records we know. Glancing up column 14, however, we find that in a number of individual cases there are wide variations from this average. Two teachers, No. 11b and No. 15, had abnormally large losses, of 29.1 per cent and 29.5 per cent, respectively, while three others, Nos. 3, 6, and 9, had abnormally small losses of 4.2 per cent, 3.7 per cent, and 4.7 per cent, respectively. The case of No. 11b is easily explained and also justified. This teacher has the upper mathematics classes. With teacher No. 11a, 7 per cent of the pupils dropped out and 7 per cent failed—less than the usual percentage of casualties in the battles with college preparatory mathematics.

On the other hand, the cases enumerated under teacher 11b are all pupils who are selected for special study—coaching, because they were behind on account of absence, or were failing for other causes in various classes in school. Of these 55 "special help" pupils this teacher held *all* to the end of the year, and enabled 39, or 70.1 per cent, to achieve promotion. This is probably as well as anyone could be expected to do with such a group. But why should the casualties in community civics and general science be so high? These subjects are usually not so deadly as to eliminate or fail 3 pupils out of every 10. Does the fact that this teacher is the athletic coach (and he is rated as a very good coach) throw any light on the cause of his high casualty list? Has he been assigned work which his special training and qualifications do not fit? These questions and the methods of teaching these subjects should receive special study by the administrators of the school.

Again, it may be asked whether the very low mortality in art results from the fact that this branch is elective and only those who are gifted and enthusiastic in this line of work are enrolled, or whether the teacher's instruction is so much more efficient and inspiring than the average, or whether on the other hand the teacher, having no recognized standards of achievement, exacts too little and marks too high. If it is the first, it must be evident that along with the unfit many must be eliminated from this subject by never attempting it, who if they did attempt it might succeed and get much of profit thereby. If it is the second, other teachers might learn much that would be of benefit to them and their pupils. If it is the last, then this teacher should receive some supervision and advice in correcting the fault. Be it any one of these or a combination of all, special studies of such cases by the teachers themselves and especially by the supervisory officers is needed and should be forthcoming. Similar remarks apply to Nos. 6 and 9.

Another line of inquiry also is suggested by this table. Of the six teachers who reported that none of their pupils failed, two reported that 18–19 per cent dropped out of their classes before the end of the year; one had 12.5 per cent of eliminations, and two had 4–5 per cent eliminations. Were some of the teachers in the habit of keeping their failures down by eliminating them before the day of final reckoning? Were things going so badly in some of the classes that pupils left school rather than go on in them? Was there trouble in any of them which justified the principal or the parents in withdrawing the pupils before the end of the year? Is any subject itself of such a nature that it does not make a vital appeal to the pupils? All these questions are pertiment, and touch conditions which it is part of good school supervision to investigate. Any one or all of them may apply to every class in which the percentage of eliminations is abnormally high. Every case that looks unusually good should be studied in order that if it really is good it may be understood, so that other teachers may learn from the unusually successful ones how to improve conditions in their own classes. Every case that looks unusually bad should be studied so that if it really is bad it may be corrected.

The teachers were asked to give the reasons why their respective eliminates dropped out, so far as these were known to them. The reasons for the cases are given in the order of their frequencies, as follows: Unknown, 61; left town, 22; went to work, 15; went to private schools, 5; overloaded, subject dropped to lighten program, 5; left school, 4; ill and left school, 3; illness, 3; gave up college preparation, 3; poor scholarship, 3; were failing and are now repeating subject, 2; were obliged to help at home, 2; changed curriculum, 2; sick, but returned and passed examination, 1; to take up music, 1; demoted, 1; total, 133. In nearly half the cases the causes are unknown. This is common in all schools, but it ought not to be so. There should be machinery for keeping track of all pupils, and, if possible, getting at their real reasons for dropping out of classes or for leaving school. In considering this list one should remember that any one of the actual individuals leaving town or leaving school might be so reported by from three to five teachers, for, in this case, he would, of course, drop out of all of his classes. On the other hand, if he left school and the fact were not generally known by the teachers, he would be reported "unknown" by from three to five teachers. Aside from the few who moved out of town, it is probable that most of the eliminates drop out of classes or out of school because of poor success or lack of interest. Either they are not intellectually capable of mastering the kind of work offered, or the kind offered does not meet their aims and needs; and they fail not by reason of lack of ability but by reason of the lack of vital interest in the subject.

These facts as to eliminations and failures, to whatever extent and in whatever schools they are found, point toward the need of an administrative and instructional feature, which as yet is as rare in schools as it is necessary—a system of vocational and educational guidance carefully set up and continuously and vigilantly maintained. This department, through the cooperation of the teachers, should act reciprocally on both pupils and curriculums, guiding the one and modifying the other so as to bring them together.

WHAT DO TEACHERS' MARKS MEAN?

Closely related to the subject of failures in school work is the question of teachers' marks. The marking system in a school and the conceptions of the various teachers as to just what a given mark means, and especially what the minimum passing mark means, are factors which largely determine whether many or few pupils are promoted. In order to find out something about these factors the survey commission asked for a distribution table for each teacher of the marks assigned to his or her pupils for the work of the half year preceding the survey. These were kindly furnished by Principal Thomspon, with the assistance of the teachers.

The data furnished us in the distributions of the individual teacher's marks have been combined in the next table so as to show by teachers and subjects how many pupils in a given subject, with a given teacher, received a mark from 91 to 100 per cent, inclusive; how many received a mark from 81 to 90, and so on down the scale. In the second column, under each step, the numbers are reduced to percentages of the teachers' total enrollment of pupils in the subject. This is done in order that the distributions of marks by different teachers may be comparable one with another and with the totals at the bottom.

Numbers and percentages of pupils receiving marks within the ranges indicated at the tops of the columns, distributed horizontally according to values of marks, and vertically according to teachers and subjects.

Teachers.	Subjects taught by these teachers.	Pupils receiving marks within the range of— 11-20		21-30		31-40		41-50		51-60 E		61-70 D		71-80 C		81-90 B		91-100 A		Total number of pupils.
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
1	Spanish							1	2.2	1	2.2	6	13.0	8	17.4	24	52.2	6	13.0	46
7	French					1	1.1			4	4.5	16	18.0	42	47.2	20	22.5	6	6.7	89
10	Latin					1	1.1	6	6.7	6	6.7	18	20.0	29	32.2	21	23.3	9	10.0	90
18	English									2	1.7	26	22.6	66	57.4	21	18.3			115
12	.....do											9	16.1	34	60.7	13	23.2			56
14	.....do									2	2.2	24	26.1	51	55.4	15	16.3			92
16	.....do							1	5.0	4	20.0	7	35.0	8	40.0					20
16	Current history					1	.9	2	1.7	7	6.0	27	23.0	66	56.4	13	11.1	1	.9	117
5	History					2	1.6	2	1.6	9	7.4	33	27.0	49	40.2	24	19.7	3	2.5	122
12	Economics											6	22.2	18	66.7	3	11.1			27
8	Civics											2	5.6	29	80.6	5	13.8			36
15	.....do									1	6.7	2	13.3	5	33.3	7	46.7			15
2	Algebra 9, geometry 10					2	1.6			4	3.1	24	18.9	49	38.6	41	32.3	7	5.5	127
3	Solid geometry 11, trigonometry 12											4	28.6	6	42.8	4	28.6			14
4	Typing and bookkeeping					1	.9	3	2.9	5	4.8	20	19.0	47	41.8	29	27.6			105
8	Bookkeeping											7	13.0	39	72.3	8	14.7			54
17	Stenography	1	1.9	1	1.9							12	23.1	21	40.4	13	25.0	4	7.7	52
6	Household arts and sewing													6	25.0	18	75.0			24
19	Cooking															5	100.0			5
9	Physics and chemistry											4	10.5	31	81.6	3	7.9			38
15	General science					2	2.9	2	2.9	6	8.8	20	29.4	22	32.4	14	20.6	2	2.9	68
All	Total: All marks	1	.1	1	.1	10	.8	17	1.3	51	3.9	237	20.3	623	47.7	301	22.9	38	2.9	1,312

This table brings out the following very interesting and significant facts:

The distribution of the 1,312 marks that were given to the 308 pupils by the 17 teachers included in the table is very similar to the distribution of the grades of intelligence of 82,936 literate enlisted men, as revealed by the results of the Army Intelligence Test. This distribution is such that the majority of the men are found in the medium grades, very closely clustered about the average, with about equal numbers above and below average, while equal smaller percents are found in the superior and the inferior grade, and equal very small percents are found in the highest and lowest grades.

That the distribution of all the marks given by the teachers conforms closely to this type can readily be seen by a glance at the bottom line of the table. It is also shown in the graph which follows, in which each of the black vertical bars represents by its length the number of pupils in each 100 that received a mark within the range indicated by the figures below that bar. It will be seen that if the small percentage of cases at the left or lower end of the distribution be disregarded, the distribution of marks is approximately symmetrical, and a smooth curve or "stream line" connecting the tops of the black bars gives a close approximation to the type of curve that would be outlined by the cut edges of a bell which has been sawed vertically through the middle. This species of bell-shaped curve is known among statisticians as the *normal probability curve.*

This is what happens when any biological fact is measured in the individuals of a group of 1,000 or more, when assembled by any chance method; that is, when selected at random or without picking out systematically any individuals having certain definite characteristics related to the one that is being measured. This kind of distribution is called a normal distribution, or a distribution according to the normal probability curve.

Teachers' marks usually distribute themselves in this way if all the marks given by a considerable number of teachers and to a large number of pupils are included in the distribution.

Studies of high-school and college marks made by several reliable investigators show that this is true for both types of institution; but that when the marks of individual teachers are so distributed, not all teachers are found to distribute their grades normally. Some turn out to be easy markers, giving a majority of their pupils the highest or second highest marks of the scale. Others are very severe markers, giving an abnormally large number of low marks. The same difference that prevails among teachers with regard to marking prevails among schools when the distribution of all marks in one of a number of schools is compared with those in each of the others. In some schools easy marking prevails. In others severe marking prevails. In still others the marks are found to conform more or less closely to the normal distribution. Winchester belongs to the last of the three types, as has been noted above. Thus, according to the consensus of opinion of the investigators above mentioned, a good distribution of marks in high school and college should be approximately as follows: Very superior or excellent, 3 to 10 per cent; superior, 15 to 22 per cent; medium, 40 to 50 per cent; inferior or unsatisfactory, 15 to 22 per cent; and very inferior or failure, 3 to 10 per cent.

This admits of putting more pupils in the highest and lowest grades than would be there in accordance with a purely chance distribution of ability, but it should be remembered in the first place that high-school and college students are to some considerable extent a selected group from which very inferior ability has been excluded, and in the second place that when relatively small numbers of individuals are measured the variations of individuals are relatively more marked, so marked in fact that the probability curve and the law of averages can not be applied to small groups except by combining them into larger groups.

Glancing at the lowest line in the preceding table, we see that 47.7 per cent of the Winchester marks lie between 71 and 80 per cent, which, according to the distribution by Winchester teachers, is evidently the medium grade. In the grades immediately above and below this are 22.9 per cent and 20.3 per cent, respectively; in the highest grade (91–100) are 2.9 per cent; and in the lowest grade (51–60 and below) are 6.2 per cent. Taken as a whole, therefore, we may say that the Winchester High School teaching staff finds that general school ability is normally distributed among its students, which is what we ought to expect.

When, however, we come to examine the distribution of marks by individual teachers, we find some striking variations from the school norm. This norm is shown in the top line of the next table, which is the same as the bottom line of the preceding table and is designated at the left by the word "all." No. 5, the teacher of history, conforms very closely to this norm in the distribution of his marks. So does No. 7, French, while No. 16, current history, places fewer pupils in the first and second grades and more in the medium grade.

Teachers' marks distributed according to the percentages of pupils receiving marks as indicated by the ranges at the tops of the columns, and grouped so as to show characteristics of distribution.

Teacher numbers.	Subjects.	Pupils receiving marks of—								
		11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
	All	0.1	0.1	0.8	1.3	3.9	20.3	47.7	22.9	2.9
16	Current history	......	......	.9	1.7	6.0	23.0	56.4	11.1	.9
5	History	......	......	1.6	1.6	7.4	27.0	40.2	19.7	2.5
7	French	......	......	1.1	......	4.5	18.0	47.2	22.5	6.7
1	Spanish	......	......	......	2.2	2.2	13.0	17.4	52.2	13.0
10	Latin	......	......	1.1	6.7	6.7	20.0	32.2	23.3	10.0
2	Algebra and geometry	......	......	1.6	......	3.1	18.9	38.6	32.3	5.5
17	Stenography	1.9	1.9	......	......	......	23.1	40.4	25.0	7.7
12	Economics	......	......	......	......	......	22.2	66.7	11.1	......
12	English	......	......	......	......	......	16.1	60.7	23.2	......
18	.....do	......	......	......	......	1.7	22.6	57.4	18.3	......
14	.....do	......	......	......	......	2.2	26.1	55.4	16.3	......
16	.....do	......	......	......	......	5.0	20.0	35.0	40.0	......
9	Physics and chemistry	......	......	......	......	......	10.5	81.6	7.9	......
15	General science	......	......	2.9	2.9	8.8	29.4	32.4	20.6	2.9
15	Civics	......	......	......	......	6.7	13.3	33.3	46.7	......
8	.....do	......	......	......	......	......	5.6	80.6	13.8	......
4	Typing and bookkeeping	......	......	.9	2.9	4.8	19.0	44.8	27.6	......
6	Household arts and sewing	......	......	......	......	......	......	25.0	75.0	......
19	Cooking	......	......	......	......	......	......	......	100.0	......

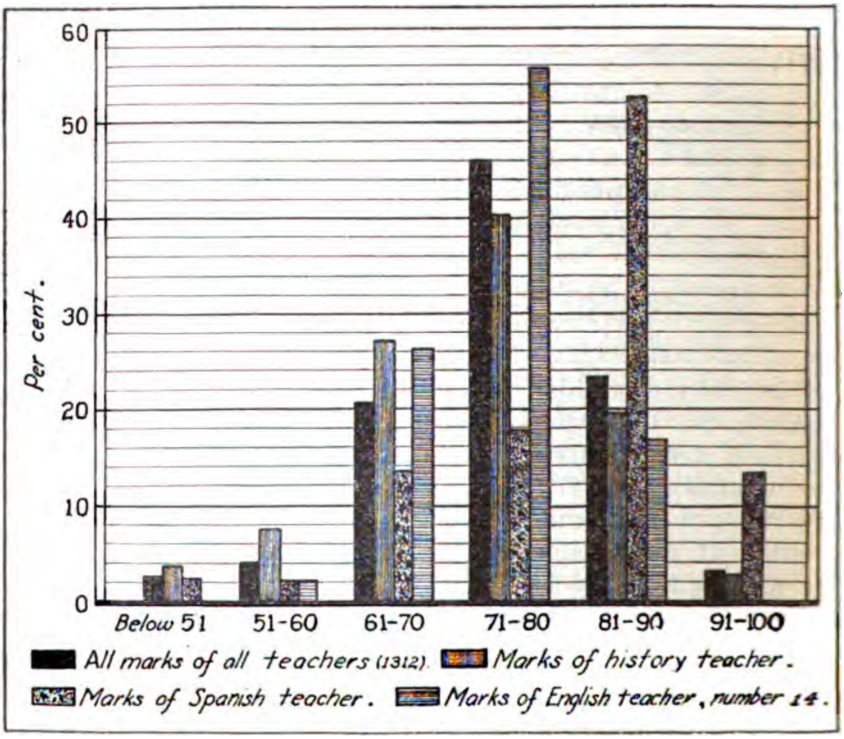
The extreme variation from the norm is made by the teacher of Spanish, No. 1, in whose judgment 65 per cent of her pupils have first and second grade ability in Spanish, only 17.4 per cent have medium ability, and 17.4 per cent have ability that is below the 71–80 grade, which represents medium ability according to the collective opinion of the teaching staff of this school. Like the Spanish teacher, the Latin teacher finds relatively few of her pupils to be of medium ability. She places about a third in that grade, a third in the two highest and a third in the grades below medium. The English teachers, Nos. 12, 18, 14, and 16, are in sharp contrast with the teachers of stenography, mathematics, Latin, and French, and especially in contrast with the teacher of Spanish; for the former group find in all their classes not a single pupil whom they regard as showing first-grade ability in English.

This is most remarkable, for ability in foreign language and ability in English usually are found to be somewhat closely correlated. All those 90–100 per cent pupils in Spanish, stenography, Latin, and French, are in one or another of the English classes. Why have none of them shown their brilliant talents in that subject?

Are half the teaching staff, of whom the English department is typical, correct in judging that they have in their classes no ability of the first grade, or are they holding to some vague standard of absolute perfection or some quality of adult achievement which none of their pupils can reach or even approximate? Or again, are their standards right but their methods such that only fair, mediocre, and inferior abilities are actually shown in their pupils' responses? We are frankly skeptical as to the absence of first-grade ability in these subjects; and also we do not believe it to be as common as the marks of the Spanish teacher indicate.

The explanation is that the teachers have no conscious consensus of opinion as to what the percentage marks mean.

The variations which we have described are strikingly shown in the following graph:



Note the close correspondence of the history teacher to the staff norm as indicated by the approximate equality of the vertically shaded bars and the black bars. Note also the piling up of the marks in the two highest grades by the Spanish teacher, whose marks are represented by stippled bars. Finally, by means of the horizontally shaded bars, note the piling up of the grades of the English teacher No. 14 in the 71–80 step of the scale and the absence of any marks in the lowest and highest steps. Evidently the English teachers find among their pupils only mediocre ability, or ability of the grades close to mediocrity, if their marks really express their judgment.

This variation among teachers in their conceptions of what the marks mean creates a situation which to say the least must be complicated and difficult when it comes to administering the passing marks for promotions. This study shows that, if things go on as they are now going until the end of the term and the passing mark is placed at 71 and adhered to, 26.5 per cent of the grades given are going to doom their recipients to failure. Of the pupils taking history, 27 per cent would fail. Of those taking Latin, 34 per cent would fail. If, as is very common, 75 were to be taken as the passing mark, approximately 40 per cent of the marks given would entail failures.

WHAT IS THE BEST POLICY WITH REGARD TO PROMOTIONS AND MARKS?

What shall the principal do when the day of reckoning comes? There is only one thing that he can do that is obviously fair to the pupils. This is to make each teacher say, after careful consideration of each pupil's work and the marks given to him, whether he is capable in that teacher's opinion of carrying on successfully the work in that department through the next highest grade. If he is, the principal should promote him in that subject, and if not he should mark him failed. In general it should be seen to that the failures in any class should not exceed 10 per cent of those remaining in that class at the end of the year.

Direct inquiry as to the practice in promotions brought out the fact that promotions in the school recently have been made on substantially the principle that is outlined above. But this method is not quite sufficient to cover the case, as the wide range in the percentages of failures shows. Next year, then, studies should be made of the eliminations and failures of the year 1919–20 and of the distributions of teacher's marks for 1920–21; and through these studies and through conferences to be held for discussing them, the teachers should be trained to distribute their marks approximately according to the normal distribution of ability as outlined above.

This can not always be done with justice, especially in the case of small classes, but when the distribution does not come out fairly approximating the normal, the cases constituting the apparent variations from a normal distribution should be carefully reviewed and studied in all lights available. It often happens in the case of a small class that the standing can not be distributed normally without resorting to a forcing of the marks, with obvious injustice to certain individuals. Teachers should clearly understand that they are never to mark an individual higher or lower, in order, merely to conform to a theoretical distribution, when such a revision goes contrary to their best and most careful judgment on the known merits of the case. However, each teacher should clearly comprehend that his marks for all his classes taken together for any one year—or, if these do not constitute a large enough number, the marks of all his pupils for two or three consecutive years—should give a distribution approximately normal. If his marks taken collectively do not distribute themselves normally, it is clear that he has either a false or an inadequate conception of the meanings of the marks that he assigns.

Teachers who are required to make distribution tables of their marks at stated intervals and after tests have been given in their classes soon reach a standard of marking which is fairly near normal in each case and is therefore fairly uniform. This practice, if adopted here, would result in closer approach to uniformity in the percentages of eliminations and failures than is shown. Such a closer approach to uniformity is certainly desirable; and in fact is imperative if thoroughgoing school efficiency is to be attained. In this connection comparisons in the cases of individual teachers are illuminating. It will be noted in general that the teachers who vary widely from the normal type in respect to the distribution of their percentage marks are also those who vary most widely from the schoolnorm in respect to their percentages of eliminations and failures.

The reader should not leave this discussion with the idea that the Winchester high-school teachers are in general worse than other high-school teachers with respect to their estimates of their pupils' achievements. Taken as a whole they are better with respect to this factor of school work than the teaching staffs of many schools, and, we think, probably better than the average. Yet the majority of them are in need of constructive guidance in the matter of marks and promotions.

In addition to our suggestions for more careful study of the theory and practice of handling the marking and promotion systems, we recommend and urge that no pupil be eliminated by the principal or any member of the teaching staff unless for the benefit of the pupil himself or unless for some reason his retention does harm to the school. Every reasonable effort should be made to hold pupils in their classes until the end of the year unless obviously they are misfits, in which case they should be shifted early to classes where they have more vital interests and better chances of success.

In general, no pupil should "be failed" at the end of the year if it is reasonably certain that he is able to do the work that lies ahead. However, any pupil having good ability but not using it to a creditable extent should be promoted conditionally and held rigorously to the work of the higher grade, and should also be made before the end of the year to pass a searching examination in the work of the previous year on which he was conditioned. If this policy is adhered to in every case, and if the teaching is so conducted as to make a vital appeal, "loafing" in the school will be reduced to a minimum.

OBSERVATION OF TEACHING.

Taken as a body, the members of the teaching staff are of unusually fine and forceful personality. Their attitude toward the school and their work are characterized by a fine spirit of service and loyalty. With two exceptions their spoken English is unusually good. They are almost without exception in good rapport with their pupils. In general their classroom management and teaching tend to be quite conventional, but are characterized by conscientiousness and thoroughness. There was little evidence, however, of any outstanding initiative and originality in the methods. There was the same tendency that characterizes the average level of teaching in most high schools, the tendency to emphasize book subject matter, and the reproduction in recitation of what the books contained, to the exclusion of thoughtful debate and discussion. In almost every class the teacher did too much of the talking, questioning, and deciding, and the pupils too little.

Modern educational theory, which by the way is far ahead of the present general educational practice, demands that every school subject be analyzed with regard to its utility as a means of training for the following main objectives:[4] Health, command of fundamental processes, worthy home membership, vocational efficiency, citizenship, resources for the worthy use of leisure, and ethical character.

In connection with the attainment of these objectives, the training in the various subjects and activities of the curriculum should aim for the development of widely applicable habits and skills, of usable information, of worthy ideals, of concepts of efficient methods of procedure, and of resources for the profitable enjoyment of leisure hours.

It will be appreciated at once, without argument, that any extensive and genuine realization of these objectives can be accomplished only by calling out and exercising the initiative of the pupils. Habits are formed, skills acquired, ambitions aroused, ideals appreciated and appropriated, concepts of method built up, and tastes, aptitudes, and appreciations for profitable recreation accumulated only through self-activity.

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[4] See Cardinal Principles of Secondary Education, U. S. Bu. of Educ. Bul. 1918, No. 35; also A Survey of the School System of Memphis, Tenn., U. S. Bu. of Educ. Bul. 1919, No. 50, pt. 2, Ch. II, pp. 115–121.

Moreover, self-activity is ineffective for the purpose unless it involves practice, many repetitions, with interest and zest, of the kinds of acts that are to be crystallized into habits and skills and of the kinds of thinking that exemplify effective methods, and of the kinds of emotions and experience that develop ideals, tastes, appreciations, and sound judgments of real and permanent values. Hence real success in constructive teaching demands a great deal more than merely getting the pupils to reproduce the subject matter of the books. It involves the promotion of real intellectual growth and character development, through awakening the ambitions of the pupils and helping and guiding them in doing what they want to do mainly for its own sake, and not so much as tasks in formal training. This means that the project-and-problem method should largely prevail. It follows, therefore, that each subject must be analyzed and evaluated on the basis of its possible contribution of project and problems that will afford practice leading toward the objectives that have just been named.

To make such analyses of his subject, to search out such vital projects and problems, and to try out and perfect such methods is the really professional part of the teacher's work, as distinguished from the artisan or routine side; and it goes without saying that the former side is vastly the more important. It is the main business of the supervisor to stimulate and guide this professional phase of the work; for if the teachers are ordinarily competent the routine side usually takes care of itself.

In general we may say that the routine side of the work in this school is better than the average in history, art, physics, Latin, stenography, typewriting, and bookkeeping; that it is about equal to the average in English, mathematics, chemistry, modern languages, and home economics; that it is considerably below the average in biology and general science; and that it is very poor in civics.

As to what we have called the professional side, there were observed evidences here and there of some special points of excellence; but examples of the use of special methods, based on analysis of educational values, and carefully designed to reach such objectives as have been named above, were few; and these did not seem to have been reduced to a smoothly working technic. This then is the side of the work which in the judgment of the commission needs most careful fostering and development. What specially should be done with this development will be stated under the topic of supervision.

COMMON ERRORS OF TEACHING TECHNIC.

There are found in almost all high schools certain kinds of faulty technic from which the teaching corps of this school are by no means wholly free:

1. Use of questions that can be answered by either yes or no. Of all answers to such questions 50 per cent will be correct whether the pupils answering know anything about it or not.

2. To a similar category, though they are not quite so bad, belong questions that can be answered by a single word, such as the name of a person or place, a date, and the like. The most common form of such a question is the inverted form ending in what, when, whom, where, etc.

3. Another vicious form of question is the mutilated or blank-filling form in which the teacher makes the statement which the pupil should be expected to make, but leaves out a single word or short phrase here and there which he pauses for a pupil to supply. Such questions are usually strung together in a running discourse, all of which is carried on by the teacher excepting the few words which the pupils supply to fill the blanks or pauses. This method trains the pupil in self-deception, for he is led to believe that he is doing some intellectual work when there is really no work left for him to do.

4. The false start, or the hesitation question. Here the teacher fails to think out his question before beginning to utter it; so he either makes two or three partially completed questions before getting his question out in its final form or else he pauses at short intervals during the utterance of his question to think up the wording or phrasing of what is to come next. The pauses are usually filled in by "a-a-h," "er-r-r," etc., as if he were afraid to permit himself a moment of silence.

5. The long statement, followed by "isn't it," "was it not," etc., to which the pupil needs only to "look intelligent" and nod assent, or say, "yes, sir" or "yes, ma'am."

6. Repeating the pupils' answers after them.

7. Permitting volley answers—half a dozen or more pupils answering the same question simultaneously, each giving a differen answer. In such a case nobody knows what anybody else has s and nothing whatever is accomplished.

8. Calling too frequently on a few willing and well-prepar pupils and ignoring a large majority who either are ill-prepared who are timid or indifferent.

9. Allowing half the class to remain idle while the other half is putting work on the blackboard.

10. Devoting one's self to one pupil who may be having a difficulty, and becoming oblivious of the existence of all the others.

All of these faults were noted in the school; most of them were relatively infrequent in the case of the large majority of the teachers, but many of them were habitual with four or five.[5]

For example, in one room during 20 minutes the observer counted 19 "inverted what" questions, two repetitions of pupils' answers by the teacher, and three hesitation questions. There were many more that got by without being counted. The following are examples, taken down verbatim: "The independence of the Thirteen States was recognized by what, when? And the Articles of Confederation were the beginning of what?" Answer: "The Federal Constitution." Teacher: "Yes; the Federal Constitution." Two of which teachers with whom these faults are habitual used poor methods throughout, and showed weaknesses in technic and educational conceptions with nearly all the means of diagnosis employed. With nearly all the others such crudities of method were relatively infrequent, though by no means wholly avoided.

The most common fault was missing opportunities to let the pupils debate, judge, and decide as a result of their own thought processes; instead, the teachers would give their own opinion and stop there. This of ocurse is stultifying to the pupils' initiative and thinking powers. Too many teachers fail to distinguish between thinking and merely recalling facts without any reference to their relations. They believe they are training the pupils to think when in reality they are giving them no opportunity whatever to do so. No one can think unless he is faced with a problematic situation which he must analyze. Having analyzed it he must set up an hypothesis for its solution, and then test out the hypothesis by comparing it with known or observed facts. In most of the recitations little of this sort of thing was seen.

Another common fault is failure to arrive, in the class, at a clear and correct explanation of a fact, event, or phenomenon; so that when the discussion of the fact has closed, every one in the class has a clear and definite concept of the principle behind the fact and the manner in which the principle applies to it. This fault usually is the result of hazy and inadequate knowledge on the part of tl teacher. This was the outstanding weakness in the teaching general science, civics, and biology in the school.

In some of the science classes words were mispronounced or pri ciples and definitions misstated by pupils; and the teachers in a tempting to correct them gave wrong pronunciations or statements themselves. It is not expected that a science teacher should know everything; but certainly he or she should never give any false information. This, of course, usually results from insufficient complete and careful preparation. In some cases in Winchester, in the judgment of the commission, it results from inadequate general knowledge of the subject.

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[5] For a more complete discussion of these errors in method see the Memphis Surv y Report, Bul., 1919, No. 50, U. S. Bu. of Educ., pt. 2, Ch. II, pp. 158–170.

SOME GOOD THINGS THAT WERE OBSERVED.

In several classes and subjects, good topical recitations were heard. In this kind of recitation, ordinarily, each of a number of pupils is assigned a topic or question for investigation and report. He is to get from books or periodicals in the library, or from any other reliable sources to which he has access, all the needed information that is available. With this in hand he prepares a brief exposition of the topic or an answer to the question, with the evidence for and against his answer.

In most of the classes where such topical reports were made they were well worked up and were well read, but it would have been far better to train the pupils to deliver them without being tied to their manuscripts. A good way to do this is to have the pupil put on the blackboard a brief skeleton outline of his points and then extemporize with the brief as a guide. One boy who was reading a report on radium read only fairly well, and did not completely hold the attention of his audience, but when a question or two were asked him afterwards he spoke extemporaneously with force and clearness. This illustrates the point that we are making, that the reports should be prepared in written form, or at least as rather complete briefs, and should then be so well digested that they can be given with freedom and power.

In connection with the physics class, there was a fine spirit of comradeship between the pupils and the teacher. Most of the boys had on hand some volunteer project or other involving knowledge of some phase of the subject, and the teacher showed active interest in these. There was much informal consultation about them during and between recitation periods. A wireless club has been organized by the class, and wireless communications are frequently transmitted and received by the members. They try to keep up to date on the developments in this field.

In a class in science elsewhere an experiment in ventilation was being demonstrated. Suggestions for variation of the conditions, to test out ideas that came to them, were made by some of the pupils, and the teacher immediately put these to the test. This was very good, and tended to foster the true experimental spirit; but unfortunately when the experiment was finished the principle which it was to illustrate was not clearly stated and explained, and was not well understood.

In a class in a foreign language, instead of having each pupil translate one short sentence only, as is an all too prevalent custom, the teacher at one time required each pupil called on to translate the entire paragraph or section and speed up. This is a practice that should be generally adopted and more completely carried out. If the pupils are obliged to prepare for such a method of recitation they must gain sufficient command over the entire lesson to translate or read it fluently. It will therefore make them study much more effectively; and the frequent repetitions of the entire passage thus secured help immensely in giving all of the pupils more of what is sometimes called a feeling for the language as well as a grasp of the thought; and it gives them practice in rendering that thought into good English idiom. Instead of so much translation it would be better in both Latin and the modern languages to have the pupils read the passage in the original rapidly, clearly, and with good intonation and inflection, and then tell what it means in English. Insistence on much of this sort of thing, instead of so much nearly literal translation, would tend to train the pupils to grasp the thought directly from the foreign words instead of first thinking of the equivalent English words and then getting the thought from these.

In every room there is a placard which says, "Say it in good English." This is an excellent way of keeping the ideal before the pupils and undoubtedly it has its effect.

The spirit of the socialized recitation was well exemplified in one of the English recitations that was observed. A student president and secretary sat at the teacher's desk, and the teacher retired to the rear of the room. A formal literary program was carried out, most of the pupils' contributions being in the form of short essays or topical reports. In reading from his program the president leaned awkwardly over it instead of holding it up to the proper level for effective delivery. When the observer suggested holding the paper up and taking a better position, the boy accepted the suggestion in the spirit in which it was made and took great interest in trying to acquire better form. This was on the whole a very good socialized recitation of the more formal sort, but it would be better if there were in the school more socialized recitations in which much informal discussion should be carried on by the pupils concerning definite points of debatable nature, or for the clearing up of difficulties. Recitations o this type are very effective in calling out initiative, stimulating interest, and promoting real, independent thinking by the pupils.

In another recitation in English a collection of photographs of the Scotch lakes and the Trossachs was handed around. This was to help create interest and establish an apperceptive mass or basis of comprehension for the study of Scott's "Lady of the Lake." This is a thing that is done very generally in literature classes in progressive schools; and a great deal more of it ought to be done in Winchester than is done. Lantern slides are very effective in this kind of work. They usually prove to be more attractive than hand pictures, and they economize time because all the pupils see the same picture simultaneously, and the teacher and pupils can talk about it while all are studying it.

The work in current history which is being given in all grades is stimulating thought and original study perhaps more than any subject pursued in the school. Conscientious study is incited and care is inculcated in the formation of opinions on current events of national and world significance. The class is organized as a forum for discussion, and topics are assigned by the chairman. The recitations are mostly of the socialized type. This work is worthy of high commendation in most of its features, but it is not a substitute for a well-worked-out sequence of studies in history and civics. In many cases this work is too heavy and difficult. The notebooks are too detailed and laborious in their accumulation of facts, and the percentage of failures and eliminations in these classes is too high. It would be better to reduce the amount of work required and make it a part of the study in the English courses, giving less attention to details and more to the significance of those details which can be made to stand out clearly as the essential factors in events and movements.

4. ORGANIZATION, ADMINISTRATION, AND SUPERVISION.

THE ADMINISTRATIVE PERSONNEL.

The present administrative personnel of the high school consists of the principal, a principal emeritus, a dean of girls, who is also study coach and part time teacher, and a cafeteria manager, whose main duties consist in regular teaching of home economics in the high and elementary schools.

To the members of the survey commission, who lived with the school or were in close touch with its activities for a period of two weeks, it seems evident that there is great need of two additions to the administrative staff, a competent stenographer-secretary for the principal and a librarian.

STUDENT ASSISTANCE IN CLERICAL WORK.

Much of the clerical and stenographic work of the school is done by students of the commercial department under the very co petent direction of the teacher of typewriting. This is an excel idea as an educational principle to be applied in the teaching it gives the pupils a chance to do real clerical work whose ut and significance they can be led to appreciate. It also promotes the spirit of community interest and cooperation within the school. Furthermore, it may be so organized as to make for real economy and efficiency of administration.

We commend the idea involved, and recommend its extension and its more careful organization; but we are convinced that such an arrangement is no proper substitute for a principal's office secretary in a school of this size.

AN OFFICE SECRETARY NEEDED.

Such a person must be permanent, so that she may be trained to carry out the manifold clerical and secretarial duties that are involved by a progressive up-to-date policy of administration and supervision. Especially is such a secretary needed to assist the principal in the tabulations and calculations connected with the use of modern educational tests and standards of measurement. She should also act as recorder and have complete charge, under the principal, of all pupils' record cards and all other permanent records of the school. With these and many other burdens of a clerical nature lifted from his shoulders, the principal would be left free for planning the administrative work, for perfecting the organization of the curriculum, the teaching staff and the pupils, for intimately supervising the classroom work, for leading the teachers in self-training in methods, and for representing the school, its needs and its achievements before the community.

EXECUTIVE WORK WELL DONE.

The executive work of the school and the general administrative leadership were being splendidly and efficiently carried on by the principal during the stay of the survey commission; but the other things mentioned above, especially that of supervising the work of the teachers and of leading them in round-table studies, were not being done. It never can be done adequately unless the principal be supplied with a secretary and given freedom for it, as we have suggested.

MISUSE OF THE SCHOOL TELEPHONES.

Another condition which we found standing in the way of effective development by the principal of his larger and more important functions was the lack on the part of many parents of the school children of any appreciation of the fact that they have no right to make unnecessary and disproportionate demands on the principal's time.

Parents call on or phone the principal or a teacher at all times of the school day and before and after sessions, asking them to call their children to the telephone or deliver messages to them. This is in most cases absolutely unnecessary, and it is tremendously wasteful of the pupils' time, and indeed of the whole school. If the same young people were working in a store, office, or shop, it would not be tolerated, and it should not be tolerated in the school. The school committee should forbid the use of the telephone, or the sending of messages between the school and the home excepting in cases of extreme emergency. The school and the time of school officers are for the benefit of all the community and not for the convenience of the careless few who lack the foresight and energy to establish an understanding in the morning of the program of family appointments for the day.

THE PRINCIPAL'S OFFICE HOUR.

The school committee should establish an office hour for the principal, and support him in adhering to it. As it is, he is interrupted at all times of the day by parents, many of whom seem to assume that he has nothing else to do but listen to long talks about relatively unimportant details concerning their children. Conferences with parents about their children's interests are, of course, very important at times, and the way must always be open for them, but they should always be by appointment as conferences are with business men and the appointments should be during the principal's regularly schedule office hour.

A TRAINED LIBRARIAN NEEDED.

The administration of a school library can not be carried on with efficiency by details of teachers whose main duties and interests lie in other fields. No unity of library policy or operation can be secured in this way; and the library feature, one of the most important phases of school work, can not be adequately developed.

There should be a librarian present during the entire day, and she should be trained both as a high-school teacher and a librarian She should assist the teachers and cooperate with them in givi instruction in the use of the library and the choice of books f recreative reading, and in planning reference work in connecti with all the subjects and in promoting a love for books and readin She should keep the card catalogues, reference lists, and other libr records up to date, and render assistance in getting out the sc publications.

The library is generously supplied with books, but is not s balanced as it should be. More fresh, readable, and author books are needed in science, geography, and travel, commercial industrial subjects, applied art and design, and home economic rich literature for high-school pupils on vocations and on eleme economics and sociology is also growing up, and the school should have some of the best of this type of literature.

THE CAFETERIA.

The management of the cafeteria is apparently efficient, so far as it can be under the physical conditions, but the physical conditions are not what they should be. The basement hall where the cafeteria is operated is insufficiently lighted and very badly cramped for space. The result is that nobody can eat there with comfort. Such conditions do not make for health. Something should be done as soon as possible to remedy this condition.

SUPERVISION OF INSTRUCTION.

Adequate supervision implies an intimate study of the theory and practice of teaching and familiarity with the best modern methods in teaching the various high-school subjects.

To give it, the principal must have time for study, reflection, testing, and investigation of classroom conditions. He must spend much time in visiting classrooms. He must confer with individuals and with groups or with the entire teaching staff in round-table discussions concerning the excellencies and defects that he finds in the class work, to the end that all may profit by the successes and failures of each. These should be considered impersonally. Such leadership by the principal of round-table discussions on principles and methods of teaching is scarcely less important than classroom supervision. In fact, the two are correlative and inseparable, if the best possible professional attitude and èsprit de corps are to be worked up.

Another purpose served by the round table is the stimulation toward professional study and reading, and the guidance of educational measurements and experiments which may be carried on in connection with it. A good beginning along this line has been made, and the attitude of the principal and teachers toward such activities gives promise of a fine future development for it. With a secretary to take care of clerical details of the principal's office, it is the belief of the survey commission that the principal can and will give splendid leadership in such work, and that the teachers without exception will cooperate with him gladly and effectively.

DIRECTED STUDY.

Study coaching for pupils who are behind in their work is being carried on in the school with good effect, but there is no organized plan of directed study for all pupils. Good pupils as well as poor ones need to be taught how to study effectively.

The commission recommends that the teachers make a careful study of this subject and that a plan for trial and gradual introduction of a system of directed study in the ninth and tenth grades be worked out and put in operation.

An ingenious time schedule, providing longer periods with directed study in view, has been worked out by Clarence D. Kingsley, State agent for high schools of the Massachusetts Board of Education. This scheme is recommended to the principal and teachers for careful study with reference to its feasibility in the schools.[6]

PUPIL PARTICIPATION IN SELF-GOVERNMENT.

All schools give their pupils more or less opportunity to govern themselves, especially in connection with the various student organizations. No one advocates setting up a school city or other political organization and turning over the school government to school officers. The principle is to give them as much responsibility for their own control as they can and will carry successfully. The purpose is not to relieve the teaching staff of responsibility, but to train the pupils in teamwork for the accomplishment of worthy public ends. The more practice they have in this while in school the more independent thinking they will do, the more balance and poise of will they will have, and the better will they be prepared to undertake the duties, obligations, and responsibilities of adult citizens when they reach their majority. This school has developed certain school organizations to this end, and it is recommended that the principles of self-government already in operation to some extent be further developed and perfected.

The right kind of beginning in the training of pupils for self-government has been made in connection with student organizations. There is a student council consisting of one representative from each of the high-school grades, which advises with the teaching staff in matters of cooperation involving the student interests and enterprises. There is a school magazine, "The Recorder," edited, managed, and published by representatives of the students under the direction of some of the teachers. The senior class elects the editor, who in turn appoints his editorial and business staff, subject to the approval of the administration of the school.

The football, baseball, basketball, and girls' hockey team are democratically managed under teacher supervision, as are also the athletic associations, the debating clubs, the freshman English club, and the senior boys' wireless club.

The commencement of 1919 also was largely a student affair in which many took part. There was an essay on Americanization, an original poem, a vocal solo, and two other essays—all by students. Also there was a pageant illustrative of Americanization, written by one of the girls and staged by a score or more of the pupils. The costumes were worked out by the pupils and teachers of the various departments, and the music was furnished by the music department. Such a cooperative plan bringing into the enterprise as many members of the various classes as possible is, in the opinion of the survey commission, a far greater educative and socializing force in a school than the traditional formal commencement in which the principal, the president of the school committee, and an imported speaker do all the talking, while the senior class sits on the stage and the remainder of the school are inactive spectators.

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[6] Report on High Schools. Bul. of Mass. Bd. of Educ., 1918, No. 5.

Besides the commencement there are held during the year a play and a musical comedy in which the pupils themselves under the direction of the department of instruction do the greater part of the work. Such cooperative enterprises are highly to be commended as practical opportunities for learning teamwork under educative direction and supervision. The one danger to be guarded against is that of allowing certain versatile and enthusiastic pupils to dissipate their energies by getting into too many extra curricular activities.

SOCIALIZED RECITATIONS.

The form of the socialized recitation may not always be the same. It is the spirit and not the form that counts. Usually it takes the form of a parliamentary or club organization and discussion. The essential principle is that the pupils enter voluntarily into an orderly discussion of the problems of the lesson, each doing his part because he wants to contribute something instead of reciting because he is called on by the teacher and must say something to get a mark.

There has been a limited use of the socialized recitation in the school, but the great possibilities for effective learning through this form of school activity have not been fully realized. We recommend a gradual and experimental introduction of this method in all classes with conferences among teachers to discuss methods and results. Not all teachers are successful with this method, and such as are not convinced that they can get good results with it ought not to be compelled to use it.

Its great utility consists in the strong motivation for effort that it engenders and its tendency to call out initiative from pupils who do not show this quality under the formal question and answer methods. It is one of the best types of pupil participation in self-government. Another strong point for it is the training it gives in parliamentary procedure and in public speaking.

EDUCATIONAL AND VOCATIONAL GUIDANCE.

This is another much-talked-of feature of school work, which, though of very recent development, is of immense value. We shall soon come to regard it as an indispensable part of the school's work. To set up a system of educational and vocational guidance it is necessary to assign the responsibility for the function to a competent and trained leader who understands the principles on which such guidance must be based. One guidance officer to head the work in both high and elementary schools would be needed. He should direct both teachers and special deputies in the schools. One teacher in the high school might be deputized to specialize on leadership in this line. His other work should be lightened accordingly. All the teachers should make a study of some of the standard books and articles on the subject, for one of the most important factors in vocational guidance is the building up of a wide knowledge of vocations, their obligations, limitations, and rewards. Every school subject should contribute something to this end.

The school has as yet done little or nothing toward setting up a system of guidance. The commission recommends that steps be taken to introduce such work, gradually if necessary, but with the serious intention of giving it an important place in the administration and instruction of the schools.

5. BUILDING AND EQUIPMENT.

The high-school building is situated on high ground, overlooking the lower portion of the town. As an architectural feature of the town it is well designed and well located, but as a school building to be used for school purposes there are some unfortunate features both of location and design. The first thing that obtrudes itself on the attention of a school man is the utter absence of playground space adjoining the school. This is not compensated for by the fact that there is a public playground in the town, for other schools besides this one lack adequate playgrounds, and the public playground is neither sufficiently large nor sufficiently near any one of them to be adequate for all. Every school needs its own playground, and in a small town there is usually no good reason why it should not have one. This is a condition for which the community should find a remedy. A serious mistake has been made in the past with regard to this important matter, but nothing whatever can be gained by seeking to place the blame for it. The only thing to do now is to find some way to remedy the blunder by providing for the high school an ample playground over which the high school shall have control and on which its students shall always have the right of way.

The building is adequately lighted, but four of the rooms are not properly lighted. They receive the greater part of their light from the rear, instead of only from the left as they should. The only rule now approved by the best authorities on school hygiene is that all rooms where writing or drawing is done shall be lighted from the left only, that the clear glass window area shall be not less than one-fifth of the floor space (better one-fourth if there are neighboring obstructions to light), that the windows shall reach to or very near the ceiling and be at least half as long as the room is wide, and that the windows be grouped in threes or fours with narrow beveled mullions between the sashes instead of wide pillars as was customary in the past.

Another fault in the design of the building is that most of the rooms are too large, while the small rooms are too small.

The building is well cared for and kept in excellent repair. It is a matter especially to be commended that the window shades were all in good order and were for the most part being intelligently used by the teachers. This is a rather exceptional condition, though obviously it ought to be the case throughout the schools everywhere.

We have already mentioned the entire inadequacy of the space available for the cafeteria.

One very desirable feature of equipment in which this school is unusually rich is that of artistic pictures and casts. These may contribute largely to general as well as to æsthetic education if they are wisely used and all their possibilities realized. In spite of the general wealth of pictures some rooms are nearly bare. It would be well therefore to redistribute the pictures at the expense of the corridors and to the benefit of these rooms. It would be well also to stimulate gifts of pictures by graduating classes and alumni until every room is well supplied.

The school has some good maps, but not enough. History, English, and classical literature and languages, commercial and economic studies, all require maps and charts in considerable variety. The school can not be considered as having adequate wall-map equipment until it has a complete set of historical maps for European and American history, a full set of political maps, a full set of physical maps, and a good assortment of blackboard outline wall maps. Also, if general geography is introduced as we recommend, the school ought to have a considerable assortment of the United States topograph maps and special folios and a few coast charts and lake and riv survey maps.

The science rooms and equipment are inadequate in many way

The physics room should be equipped with a demonstration tabl and a good line of demonstration apparatus, sufficient, in additio to that now on hand, to cover adequately by demonstrations all th topics included in the course. There should also be added sufficient storage cases in which to keep this apparatus. The physics laboratory is very well stocked in some lines, but other important phases of the subject are inadequately provided for. This is particularly true as to demonstration apparatus for mechanics and sound.

The provision of apparatus and supplies for the study of chemistry is, on the whole, more complete than that for the other science subjects, but is none too generous. A demonstration table is needed in the chemistry room, as there is only one such table for the subjects of chemistry, biology, and general science. This is in the classroom adjoining the chemical laboratory and is needed for the exclusive use of the classes in the latter subjects. The equipment for biology includes several good microscopes, but beyond that there is very little of what should be provided. There should be a combined laboratory and classroom for these subjects, with laboratory tables for individual student experiments, a demonstration table for experiments to be made by the teachers before the classes, and chairs for the pupils to occupy during the demonstrations and recitations. General science should be placed in the seventh and eighth grades and required of all pupils. The rooms in which it is taught should be adequately equipped for demonstration and laboratory experiments. Civic biology, including physiology and hygiene, should be made a stronger, more practical, and more attractive course in the ninth grade.

The equipment for cooking and sewing is fairly complete and sufficient to accommodate the small numbers of high-school classes, but is too small for the elementary-grade classes now using it.

The high school has no equipment at all for manual arts. Considering the fact that so few pupils graduating from the school now go to college, the lack of facilities for a complete 4-year sequence of work in manual training constitutes a serious defect. It is found in many schools that many of the boys who are preparing will carry manual training successfully as an extra subject if they are given the opportunity, and such opportunity often seems to hold in schoolboys in the college preparatory curriculum who otherwise would lose their interest and drop out. Then there is that large percentage of boys who are preparing for industrial and commercial careers. The latter obviously need this type of prevocational work; and at least some of it would be of great advantage to those boys who are preparing to enter office or selling positions in manufacturing lines and would gain much from the insight into manufacturing materials, tools, and processes which instruction in constructive manual work affords.

The commission recommends that equipment for drawing and woodwork be installed just as soon as it can be done, and that this be followed by the introduction of forge and sheet metal work and machine shop as fast as the classes come on prepared to do the work. This would mean the completion of the shop installations in four years. With a competent instructor much of the requisite equipment could be made by the boys themselves as a part of their regular manual training practice. This has been successfully accomplished in many a school.

All of this equipment, of course, will involve some outlay of money; but the survey commission finds that the community can afford to invest it, and believes that such investment will return good dividends, first, by stimulating interest and holding pupils in school who otherwise would drop out, and, second, by contributing to the economic and social efficiency of the students. The community should realize that in this matter of a broader and richer program of studies and of adequate equipment for it, the Winchester School, though a splendid school in many other of its characteristics, is very decidedly behind the average of other schools in communities far less prosperous; hence the recommendations of the commission for a broader educational policy and a more liberal equipment.

6. CONCLUSIONS AND RECOMMENDATIONS.

1. As compared with other schools of its class, the Winchester high school is attracting and holding its pupils well; but not nearly so well as it ought and might. To this end the commission recommends a broader and more democratic educational policy, involving less subservience to traditional college entrance requirements, broader and richer curriculums for both college-bound and noncollege-bound pupils, and better methods of teaching, to be brought about by better methods of organization and supervision.

2. The commission especially urges cooperation between the high-school principals and leading teachers on the one hand and the college authorities on the other hand. The purpose of such cooperation should be to broaden and enrich the college preparatory and the other curriculums, so that more options and more appealing types of work may be offered by the schools and accepted by the colleges for entrance credits. Such cooperation has been carried on in the Middle West for two decades through the North Central Association of Colleges and Secondary Schools and has resulted in great benefit to both high schools and colleges.

3. The school has been criticized locally because of the alleged failure of its graduates in colleges. Reports from the colleges indicat that there is little or no foundation in fact for this criticism. The rea cause for concern lies in the fact that the school sends to college suc a small proportion of its graduates, and that it provides in bot

college-preparatory and nonpreparatory curriculums so little training that has real significance in community life.

4. Citizens of the community should refrain from criticism of the schools until they are in possession of the facts of the case. Under no circumstances should the administration or teachers be criticized before the children; and no criticism should be made publicly until it has first been made without avail to the administration and the school committee.

5. The commission has embodied in this report constructive recommendations for the rebuilding of the high-school curriculums, and urges that thoroughgoing curriculum revision be begun during the coming year and consistently carried out during the next four years. In connection with such revision, not only the arrangement but the content and methods of the sequences of studies should be carefully considered and thrashed out. Round-table meetings of the teachers and administrators should be held frequently for this purpose, and representatives of all departments should take active part in them.

6. As to the training of its teachers, the Winchester High School stands well in comparison with other schools, as far as is indicated by college degrees, but most of the teachers are short on training in special professional courses for teaching.

7. About half the teachers did a creditable amount of special professional reading and pedagogical study during the past year. The half who did less than a creditable amount should be stimulated to do better. Special reading circle and round-table studies should be organized for this purpose, and the topics of study should be determined by the needs for improvement in the various phases of the school work. The philosophy of the curriculum and the general principles of secondary education should be studied cooperatively by the teachers, led by the principal. The studies should be centered on the special problems involved in remedying such defects as have
been pointed out in this report in improving such con
been described as fair or average, and in carryin
excellence such features as have been commended

8. Sixty-seven per cent of the teachers have taken
mer term or extension work of various sorts. Thi
administration should not relax effort to stimulat
as a means of keeping the teachers growing pr
hundred per cent with master's degrees" is a good
corps to set before itself. It is an ideal not likely
present educational situation, but it is a migh
toward. Meetings in which experiences are e
are taking university extension, corresponden

would be useful in promoting enthusiasm and unity of purpose among the teachers in their professional study.

9. Study of the duty loads carried by the teachers shows that the loads carried by them vary more widely than is desirable, mainly on account of the wide variations in the sizes of the class enrollments. A few of the loads are too light for good economy, but only that of the girls' physical director is too heavy. The commission recommends the employment of an additional instructor, so that a full-time director can be employed on high-school work and another on grade work.

10. A study of the sizes of recitation sections reveals a wide variation in the enrollment of the sections in different studies. Some of the sections are too small for reasonable economy. Effort should be made either to eliminate these by giving these subjects in alternate years or possibly by dropping the subjects in favor of others that are more significant and desirable, or by promoting and advertising these subjects in the school with a view to attracting more pupils into them.

The ninth grade algebra sections are too large. This probably is one reason why they did poorly on the standard tests. The remedy is to form three sections instead of two. The sections so made should distribute the pupils according to ability. Thus more exacting requirements and greater speed may be and should be insisted on from the pupils having superior ability, while less speed and more drill and explanation should be the rule for the section containing the slowest pupils. The middle section should progress at about the customary rate.

11. A study of the percentages of eliminations and failures shows that the losses in the Winchester High School are quite moderate. However, as is usual, there are wide variations among the different teachers in the percentages of eliminations and failures. The commission recommends that each year a careful study be made into the causes of these variations, to the end that the most successful methods may be more generally adopted and the unsuccessful methods be discontinued.

We recommend the adoption of a system of vocational and educational guidance, as a means both of preventing eliminations and failures and as a means of helping bright and ambitious pupils to find themselves and use their opportunities to their best advantage.

12. A study of the distribution of teachers' marks shows that the staff as a whole distributes its marks in a nearly ideal way, giving about the right percentage of marks in each of the five grades A, B, C, D, and E. On the other hand about half the teachers distribute their marks in a very erratic and unskilled manner. Such variations are productive of gross injustice, and supervisory measures should be taken to secure a better consensus of opinion as to the meanings of

the marks used, and a closer adherence by individual teachers to the norm established by the staff collectively.

13. Standard tests were given in several high-school subjects. The showing was remarkably good in the United States history test, very creditable in Latin, about average in physics, French, Spanish, and English, and poor in ninth-grade algebra. The typing tests seem to indicate very creditable work.

14. The commission finds that the teaching tends too largely to be bookish and conventional. We recommend that the teachers be stimulated to analyze the subject matter with regard to fundamental educational values, and to use the project-problem method in order to secure these values. A few of the teachers habitually use faulty types of questioning and class management, but most of them are relatively free from glaring technical imperfections. Some especially good methods and devices were observed. More thorough supervision and more frequent teachers' round-table meetings would help to make the good methods more common and the technical falts less so.

15. The commission recommends more frequent and more skillful use of the socialized recitation, and of visual aids of all kinds.

16. The gradual introduction of organized plans for directed study and for more extended participation by pupils in the government of the school is also recommended.

17. We recommend the employment of a competent stenographer-secretary for the principal, who shall also act as recorder and have charge under the principal of all school records. The intent of this recommendation is to free the principal from clerical details in order that he may have time and strength for the intensive supervision which, in our judgment, constitutes the greatest need in the school.

18. The school needs a trained teacher-librarian to be on duty throughout each school day, and the library needs new and up-to-date books in certain important lines.

19. Adequate playground space should be provided and equipped for the high school.

20. The school is in need of an additional room for a science laboratory (biology) and additional demonstration tables and equipment for physics and chemistry. If general geography is introduced, as we recommend, a room should be specially set aside for a geographical laboratory.

21. We recommend the immediate installation of a wood-working shop equipment and the installation during the next four years of a forge shop, bench and sheet-metal shop, and a machine shop, thus making possible a four-year sequence in industrial arts.

22. The commission also strongly indorses the junior high-school form of school organization, and recommends that in the readjustment of the schools of Winchester adequate provision be made for this type of school.

Chapter VI.

RESULTS OF THE STANDARD EDUCATIONAL MEASUREMENT TESTS IN THE WINCHESTER SCHOOLS.

CONTENTS.—1. In the elementary schools: The Courtis arithmetic test; the Ayres spelling test; the Monroe silent-reading test; the Stone reasoning test in arithmetic. 2. In the high school: Algebra tests; Henmon's Latin tests; Handschin's French and Spanish tests; Sackett's scale in United States history; Thurstone's physics tests; English composition test; test in typewriting.

1. IN THE ELEMENTARY SCHOOLS.

Mere opinon regarding the results of the teaching activities of the school, expressed in terms of the progress of children in some of the subjects, which the school offers, has given way to fairly accurate methods of determining the progress of pupils in such subjects as spelling, penmanship, arithmetic, and reading. An educational yardstick is now at hand by which efficiency in these subjects can be judged and the relative standing of schools or of classes determined. There is much of the work of every good school, however, that is too intangible to admit of definite, precise measurement—the character-creating influence of the school, to mention but one illustration. On the other hand, there is much of the work of the school that is, or should be, definite, tangible, and hence measurable. It is in this field of the school's activity that educational measurement tests can render a school system an important service.

Only those tests that have been well standardized were given in the elementary schools of Winchester, thus making it possible to compare the results secured in the Winchester schools with those obtained in other systems under the same conditions. The tests were: The Courtis Arithmetic, the Ayres Spelling, the Monroe Silent Reading, and the Stone Reasoning Test in Arithmetic.

THE COURTIS ARITHMETIC TEST.

The most widely used test for judging of the efficiency of schools and classes in the operations of addition, subtraction, multiplication, and division with integers is that devised by Dr. S. A. Courtis, of Detroit. By testing thousands of children of all grades and in all types of schools throughout the country, he has formulated a standard of attainment in both speed and accuracy by which other schools can be rated.

The series consists of four tests printed on a four-page folder, one test to each page. Twenty-four examples of equal difficulty are given in each. A time limit is set for each test, 8 minutes for the additional test, 4 minutes for the subtraction, 6 minutes for the multiplication, and 8 minutes for the division test. Within these respective time limits each pupil tested is required to solve as many examples as he can. The papers are then marked for the number attempted (speed) and for the number which are correct (accuracy). In order that all tests may be standardized, no credit is given for examples incomplete or partially correct. The following are sample exercises of the four tests, the remaining examples of each are of equal difficulty:

Test No. 1.—Addition (8 minutes).

927	297	136	486	384	176	277	837
379	925	340	765	477	783	445	882
756	473	988	524	881	697	682	959
837	983	386	140	266	200	594	608
924	315	353	812	679	366	481	118
110	661	904	466	241	851	778	781
854	794	547	355	796	535	849	756
965	177	192	834	850	323	157	222
344	124	439	567	733	229	953	525

Test No. 2.—Subtraction (4 minutes).

115364741	67298125	92057352	113380936
80195261	29346861	42689037	42556840

Test No. 3.—Multiplication (6 minutes).

8876	9245	7368	2594	6495
93	86	74	25	19

Test No. 4.—Division (8 minutes).

87)14467 86)60372 94)67774 25)9750

OBSERVATIONS ON THE COURTIS TESTS.

Reference to the following table shows that there are wide differences between schools, both in the rate and accuracy of the work in arithmetic. It is a rather striking fact that the average attempts of the eighth grade fall below those of the seventh in most cases. This may be due to the fact that the pupils of the seventh grade have had better training, or that they are a group superior in natural ability to the pupils of the eighth grade, or the reason may be found in the lessening of formal arithmetical work given in the upper grades.

Among the other variations that may be noted are the scores in grade 4 in the Wyman and Chapin Schools, the latter surpassing the former both in speed and accuracy.

Grade 5 in the Chapin School is made up of two divisions, 11 in one and 26 in another. The better scores made by the larger division is no doubt due to the fact that the brighter children of the grade are placed in this division.

These inter-school and inter-room variations are of interest chiefly to the superintendent and the principals. Knowing that there are such differences, the superintendent then has the problem of discovering why the results in some schools are better than in others, and whether it is possible to bring the poorer schools up to standard. He will find that some of the differences may be due to any one or all of the following factors: Different teachers, different methods, difference in native abilities of the pupils, the policy of grouping pupils according to abilities as shown in previous work.

In order to discover the cause of variation the superintendent should supplement the standard tests by some of the intelligence tests and by careful observations of teaching methods. If this is done it may be discovered whether a class making a low score is lacking in ability or whether the cause may be looked for in the teaching.

It may be said that already the superintendent is supplementing the subject tests with intelligence tests so as to diagnose the school system. The survey commission recommends that these be combined and that such correlations be worked out as will show definitely why some classes and individual pupils are not doing acceptable work.

Inter-city comparisons.—In the next table comparisons are made between the results obtained in Winchester and those obtained in other communities.

In the speed of addition, Winchester appears about one grade behind the general Courtis standards and two grades behind the scores made in the Boston schools. The medians are, however, very close to those obtained in Brookline and from the general tabulation of small cities.

In the speed of subtraction the Winchester scores are nearer those of the standard and of Boston. In the fourth grade the Winchest score is above the others. The medians are somewhat better th Brookline results in the fifth grade and decidedly better in the sixt Comparison with the small city standards shows Winchester abov the fourth, sixth, and seventh grades, but below in the eighth.

In the speed of multiplication only the fourth grade median is above that of the Courtis standards or Boston. The fifth and seventh grades made scores approximately equal to the seventh, while the sixth and eighth grades scored considerably lower. Winchester medians are about a grade above those for Brookline and approximately equal to those in the small cities.

In the speed of division Winchester medians are above the Courtis standards in the fourth and seventh grades, but the other three grades are below. They are below the Boston scores except in the fourth and seventh grades. Winchester stands slightly below Brookline in spite of the fact that it has done better than Brookline in the other operations. The fourth and seventh grades in Winchester made scores higher than those in the small cities. The other grades were somewhat below.

In general the speed shown in the Brookline schools is somewhat below the Courtis norms. However, grade 4 does considerably better, and grade 7 also equals or exceeds the standards in all operations except addition. Boston scores are higher than the Courtis standards; so Winchester falls below these, generally by at least one grade. Brookline is a community which is probably very like Winchester, and in comparison Winchester does slightly better. The small city medians are usually very close to the Winchester scores except that in grade 7 the Winchester results are somewhat higher and in grade 8 uniformly lower.

In the accuracy of addition Winchester falls considerably below the Courtis standards and the Boston scores. There is little or no improvement in Winchester through grades 5, 6, and 7. The Brookline medians are almost the same as those in Winchester, and this is also true of the small city scores except that in grades 6 and 7 the Winchester medians are somewhat lower.

The accuracy scores for subtraction are about a grade below the Courtis standards and Boston medians. They are somewhat better than Brookline scores and almost the same as the small city medians.

In the accuracy of multiplication Winchester is below the Courtis standards except in grade 7 and is below the Boston scores throughout. Brookline is lower in the fifth but higher in the sixth grade. The Winchester scores are decidedly below the small city scores except in grade 7.

In the accuracy of division grades 5 and 6 fall nearly a grade below the Courtis standards. Grades 7 and 8 practically attain the standards, while grade 4 is substantially above. Winchester scores are below the Boston scores except in grades 4 and 7. They are practically a grade below Brookline and somewhat below the small city standards.

In general, the Winchester medians are lower than those with which they have been compared. The difference is not always great, but it runs as high as two grades in some places and frequently is as much as one grade. There are only a few rooms in which the median attainment equals the standards for the same grade. These findings suggest that some further emphasis on drill in the fundamental arithmetical operations will be profitable to the pupils making low scores.

COURTIS TESTS.

Interschool comparison of grade medians.

Grade and school.	Number cases.	Addition.		Subtraction.		Multiplication.		Division.	
		Attempts.	Accuracy.	Attempts.	Accuracy.	Attempts.	Accuracy.	Attempts.	Accuracy.
Grade IV	121	6.5	59.4	8.4	77.1	7.6	63.5	5.5	71.5
Chapin	17	6.5	65.0	9.8	82.9	7.5	57.5	5.5	72.5
Gifford	14	7.0	70.0	8.5	70.0	6.7	60.0	4.0	55.0
Highland	12	7.5	61.0	8.5	74.3	7.0	58.4	7.5	75.0
Mystic	12	6.5	70.0	9.0	75.0	8.0	80.0	6.0	85.0
Rumford	21	8.0	65.0	9.5	84.0	7.8	65.0	10.8	95.0
Washington	11	7.7	65.0	9.0	96.7	7.7	73.3	6.0	85.0
Wyman	34	5.6	51.9	6.0	65.0	5.9	53.7	3.2	59.8
Grade V	139	7.6	69.2	8.5	81.9	7.3	69.2	5.7	68.2
Chapin	11	6.8	62.5	7.5	88.0	7.5	42.0	6.5	55.5
Chapin	26	8.5	70.8	8.5	81.2	8.4	78.7	7.2	57.5
Gifford	12	6.5	57.5	8.5	83.7	7.8	75.0	4.5	68.3
Gifford	37	8.2	73.0	8.0	81.8	7.7	64.0	5.2	85.0
Washington	24	6.5	80.0	8.5	69.3	6.8	75.0	6.3	89.2
Wyman	29	7.3	75.0	8.6	82.0	6.7	67.7	5.4	77.7
Grade VI	135	8.4	63:3	10.2	81.3	8.6	69.7	6.5	90.9
Chapin	31	8.8	66.7	11.6	81.7	9.0	73.3	7.3	77.7
Prince	34	9.1	59.4	10.5	84.1	8.8	75.0	5.8	80.0
Wadleigh-7	36	9.0	66.4	11.6	87.3	9.9	75.0	7.5	86.8
Wadleigh-8	34	6.7	53.8	9.7	70.0	7.5	61.9	6.4	60.0
Grade VII	138	9.1	65.8	11.5	85.1	10.5	84.5	13.6	97.8
Prince	38	10.6	71.9	13.7	93.1	10.5	84.5	13.6	97.8
Prince	28	8.3	60.8	11.9	90.8	9.5	62.8	8.7	100.0
Wadleigh-5	38	8.6	61.6	9.1	68.3	10.8	87.7	8.6	81.5
Grade VIII	145	9.6	72.8	11.0	85.7	9.1	74.4	8.7	89.7
Wadleigh	34	9.5	73.7	10.9	85.4	8.8	71.9	8.5	88.3
Wadleigh	39	8.0	72.2	10.7	88.0	9.1	72.9	8.0	87.5
Wadleigh	36	10.1	68.8	10.8	82.7	9.7	81.1	8.8	85.5
Wadleigh	36	10.5	74.5	11.5	87.0	9.4	78.7	9.9	100.0

COURTIS TESTS.

Comparative data.

Grades.	Winchester, 1920.		Courtis, norms.		Boston, May, 1915.		Brookline, 1915.		Small cities, June, 1916.	
	Rate.	Accuracy.	Rate.	Accuracy.	Rate.	Accuracy.	Rate.	Accuracy.	Rate.	Accuracy.
IN ADDITION.										
4	6.5	59.4	7.4	64	8.0	67			6.7	60
5	7.6	69.2	8.6	70	9.4	71	8	62	7.8	68
6	8.4	63.3	9.8	73	11.1	75	8	67	8.9	71
7	9.1	65.8	10 9	75	12.3	76			9.8	72
8	9.6	72.8	11.6	76	13.7	78			10.2	74
IN SUBTRACTION.										
4	8.4	77.1	7.4	80	7.6	82			7.3	76
5	8.5	81.9	9.0	83	9.3	85	8	75	8.6	82
6	10.2	81.3	10.3	85	11.1	87	9	80	9.7	84
7	11.5	85.1	11.6	86	12.2	87			11.2	85
8	11.0	85.7	12.9	87	13.6	89			12.1	85
IN MULTIPLICATION.										
4	7.6	63.5	6.2	67	6.2	67			6.3	68
5	7.3	69.2	7.5	75	7.7	76	6	67	7.5	76
6	8.6	69.7	9.1	78	9.4	79	7	75	8.8	79
7	10.5	81.0	10.2	80	10.5	81			10.0	80
8	9.1	74.4	11.5	81	11.6	83			11.0	81
IN DIVISION.										
4	5.5	71.5	4.6	57	4.8	65			4.5	59
5	5.7	69.2	6.1	77	6.5	81	6	80	5.7	77
6	6.5	80.9	8.2	87	8.7	87	8	88	7.8	87
7	10.1	90.0	9.6	90	10.2	90			9.6	91
8	8.7	89.7	10.7	91	12.2	92			10.4	93

THE AYRES SPELLING TEST.

In testing the spelling ability of the children of the Winchester schools the Ayres Spelling Scale was used. The scale is made up of 1,000 words most commonly used in correspondence, business, and books. The words are arranged in groups in order of difficulty as determined by tests given in 84 cities. Ten words were given each grade, each test being selected from the group of words upon which the grade average for 84 cities was 73 per cent. In other words, each grade in Winchester was given a spelling test upon which thousands of children in the United States in corresponding grades had averaged 73 per cent. The tests used are as follows:

Fourth grade.	Fifth grade.	Sixth grade.	Seventh grade.	Eighth grade.
1. Eight.	1. Sometimes.	1. Often.	1. Meant.	1. Organization.
2. Aboard.	2. Period.	2. Total.	2. Distinguish.	2. Emergency.
3. Restrain.	3. Firm.	3. Examination.	3. Assure.	3. Appreciate.
4. Population.	4. Crowd.	4. Marriage.	4. Probably.	4. Sincerity.
5. Figure.	5. Relative.	5. Opinion.	5. Responsible.	5. Athletic.
6. Everything.	6. Serve.	6. Witness.	6. Difficulty.	6. Extreme.
7. Farther.	7. Due.	7. Theater.	7. Develop.	7. Practical.
8. Knew.	8. Lodge.	8. Supply.	8. Material.	8. Proceed.
9. Fact.	9. Information.	9. Course.	9. Senate.	9. Cordially.
10. Public.	10. Present.	10. Doubt.	10. Agreement.	10. Character.

Results of spelling test.

Schools.	Grade IV.			Grade V.			Grade VI.			Grade VII.			Grade VIII.		
	Pupils.	Number correct.	Per cent correct.	Pupils.	Number correct.	Per cent correct.	Pupils.	Number correct.	Per cent correct.	Pupils.	Number correct.	Per cent correct.	Pupils.	Number correct.	Per cent correct.
Chapin	17	94	55.3	38	241	63.4	30	209	69.6	.....	.....	.....	.....	.....	.....
Gifford	14	109	78.0	50	345	69.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
Highland	12	88	73.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mystic	12	83	69.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Prince	.....	.....	.....	.....	.....	.....	35	248	70.9	65	379	58.3	.....	.....	.....
Rumford	21	178	85.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington	13	99	76.1	23	160	69.7	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wadleigh	.....	.....	.....	.....	.....	.....	72	516	71.7	72	454	62.7	146	1,097	75.2
Wyman	34	191	56.2	32	173	55.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
Combined	123	842	68.4	142	919	64.7	137	973	71.0	137	833	60.3	146	1,097	75.2
Standard	.....	.....	73.0	.....	.....	73.0	.....	.....	73.0	.....	.....	73.0	.....	.....	73.0

Results of spelling tests.

Schools and grades.	Boys.			Girls.			All pupils.		
	Number.	Words correct.	Per cent correct.	Number.	Words correct.	Per cent correct.	Number.	Total words correct.	Per cent correct.
Chapin:									
IV	7	33	47.1	10	61	61.0	17	94	55.3
V	6	31	50.2	4	27	67.5	10	58	58.0
V	13	87	66.8	15	96	63.9	28	183	65.4
VI	17	113	66.5	13	96	73.8	30	209	69.6
Gifford:									
IV	6	42	70.0	8	67	83.8	14	109	78.0
V	9	61	67.7	3	27	90.0	12	88	73.4
V	21	138	65.6	17	119	70.0	38	38	67.6
Highland:									
IV	6	42	70.0	6	46	76.7	12	88	73.3
Mystic:									
IV	7	48	68.6	5	35	70.0	12	83	69.4
Prince:									
VI	13	81	62.2	22	167	75.9	35	248	70.9
VIIa	21	136	64.8	19	119	62.6	40	255	63.8
VIIb	14	73	52.1	11	51	45.4	25	124	49.6
Rumford:									
IV	9	70	77.7	12	108	90.0	21	178	85.0
Washington:									
IV	7	48	68.6	6	51	85.0	13	99	76.1
V	13	85	65.4	10	75	75.0	23	160	69.7
Wadleigh:									
VI	20	160	80.0	20	172	86.0	40	332	83.0
VI-8	12	65	54.2	20	119	59.5	32	184	57.6
VII-5	15	76	50.7	22	137	62.3	37	213	57.6
VII-6	16	107	67.0	19	134	70.5	35	241	69.0
VIII-1	16	110	68.8	17	129	75.9	33	239	72.5
VIII-2	21	151	72.0	18	151	83.9	39	302	78.0
VIII-3	23	129	56.1	15	119	79.3	38	248	65.3
VIII-4	20	178	89.0	16	130	81.2	36	308	85.6
Wyman:									
IV	18	98	54.5	16	93	58.4	34	191	56.2
V	15	80	53.5	16	93	58.4	31	173	55.8

OBSERVATIONS ON THE SPELLING TEST.

The words selected from the spelling tests were so chosen that the standard average score is 73 per cent. In every grade but the eighth the Winchester schools fall below this standard. In grades 4 and 6 it amounts to only about one-half a word. The fifth grade falls 10 per cent below the standard, which means that out of 10 words the pupils misspelled one more than the average group. The seventh grade falls nearly 13 per cent below the standard.

There are variations of considerable magnitude between the scores of various schools, and some of these scores surpass the standard to considerable degree.

Reference to the table in which the results are tabulated separately for the boys and the girls showed that the girls' averages are consistently higher.

THE SILENT READING TEST.

To test the reading ability of the children in the elementary schools of Winchester, the Standardized Silent Reading Tests, Form 2, devised by Walter S. Monroe, were given. This test, samples of which are given here to indicate its character, is a test of both speed and comprehension in reading.

GRADES 3, 4, AND 5.

City________________________________ State______________ Date_____________
Pupil's name_____________________________ Age____________ Grade___________
School______________________________________ Teacher______________________

DIRECTIONS FOR GIVING THE TEST.

After telling the children not to open the papers, ask the children on the front seats to distribute the papers, placing one upon the desk of each pupil in the class. Have each child fill in the blank space at the top of this page. Then make clear the following:

INSTRUCTIONS TO BE READ BY TEACHER AND PUPILS TOGETHER.

This brief test is given to see how quickly and accurately pupils can read silently. To show what sort of test it is, let us read this:

> I am a little dark-skinned girl. I wear a slip of brown buckskin and a pair of soft moccasins. I live in a wigwam. What kind of girl do you think I am?
>
> Chinese French Indian African Eskimo

The answer to this exercise is "Indian," and it is to be indicated by drawing a line around the word. The test consists of a number of exercises like this one. In some of the exercises you are told to draw a line around the word which is the right answer, or to mark it in some other way, and in some you are to write out your answer. If an exercise is wrong it will not count, so it is wise to study each one carefully until you know exactly what you are asked to do. The number of exercises which you can finish thus in five minutes will make your score; so do them as fast as you can, being sure to do them right. Stop at once when time is called. Do not open the papers until told, so that all may begin at the same time.

The teacher should then be sure that each pupil has a good pencil or pen. Note the minute and second by the watch and say, "Begin."

ALLOW EXACTLY FIVE MINUTES.

Answer no questions of the pupils which arise from not understanding what to do with any given exercise.

When time is up, say "Stop" and then collect the papers at once.

No. 1 (Rate value 9; comprehension value 1.1).

The little red hen was in the farmyard with her chickens, when she found a grain of wheat. "Who will plant this wheat?" she said.

Draw a line under the word which tells where the little red hen was.

barn chicken house feed bin farmyard

No. 2 (Rate value 9; comprehension value 1.1).

Nowhere in the world do the children have so many good times as in Japan. They are allowed to play anywhere, and there are all sorts of toys and games for their amusement.

Are the children of Japan happy? Answer with "Yes" or "No."

No. 3 (Rate value 6; comprehension value 1.3).

I have red, yellow, and blue flowers in my hand. If I place the red and yellow flowers on the chair, which color do I still have in my hand?

No. 4 (Rate value 7; comprehension value 1.4).

A donkey, a cat, and a dog went for a walk. After a long time they came to a farmyard. A rooster stood on the gate, crowing and screaming.

Where was the rooster?

GRADES 6, 7, AND 8.

The directions for giving the test were the same as for the 3, 4, and 5 grades. Some of the questions follow:

No. 1 (Rate value 9; comprehension value 2.0).

Mrs. Bird was a timid, blushing little woman about 4 feet in height, and with mild blue eyes, and a peachblow complexion, and the gentlest, sweetest voice in the world.

How tall was Mrs. Bird?

No. 2 (Rate value 7; comprehension value 2.1).

Carbon dioxide is injurious to people. Plants give off carbon dioxide at night and take it up in the daytime.

Is it a good plan to have plants in the room where you sleep?

No. 3 (Rate value 13; comprehension value 2.7).

Everyone hates a tattler. The tattler is the object of disgrace on any playground. But everyone respects a truthteller when wrong has been done. A little girl of 9 was brought into court as a witness to tell all she knew of a crime that had been committed.

Will she be disgraced if she tells what she knows? Answer "Yes" or "No."

Results of reading tests tabulated (median scores—rate and comprehension).

Monroe reading test grade medians.

Schools.	Grade IV.			Grade V.			Grade VI.			Grade VII.			Grade VIII.		
	Pupils.	Rate.	Comprehension.	Pupils.	Rate.	Comprehension.	Pupils.	Rate.	Comprehension.	Pupils.	Rate.	Comprehension.	Pupils.	Rate.	Comprehension.
Chapin	19	101	14	10	101	14.5	30	108	19	.....	.....	.....	.....	.....	.....
				28	108	18	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gifford	14	108	19	11	108	20	.....	.....	.....	.....	.....	.....	.....	.....	.....
				40	114	21	.....	.....	.....	.....	.....	.....	.....	.....	.....
Highland	12	108	19.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mystic	11	108	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Prince	.....	.....	.....	.....	.....	.....	33	108	24	36	108	24	.....	.....	.....
									35	35	108	24	.....	.....	.....
Rumford	23	101	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington	13	114	21	22	108	22	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wadleigh	.....	.....	.....	.....	.....	.....	38	132	38	37	124	29	31	140	37
							35	124	24	37	140	35	40	113	32.5
													38	118.5	29
													36	140	43
Wyman	35	108	18	31	108	21	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grade totals	127	106.6	19	142	108.7	20.5	136	117.7	26.4	145	119	28.5	145	126.4	34
Monroe standards	.....	80	14.5	.....	93	20	.....	92	21	.....	102	24	.....	108	27.5

OBSERVATIONS ON THE READING TEST.

In this test the grade medians for Winchester, both for speed and comprehension, exceed the standard median to a considerable degree. Frequently this excess amounts to a full grade. For instance, the Winchester sixth grade median is 117.7 for speed and 26.4 for comprehension, which exceeds the standard both for rate and comprehension of the seventh grade. In fact, the sixth grade rate in Winchester exceeds the standard eighth-grade rate. Only a few rooms in the whole system fail to equal or exceed the standards.

There are some variations among the schools. For example, the rate in the fourth grade varies from 105 to 114 and comprehension from 14 to 21. The rate and comprehension in the Chapin School are uniformly lower than in the other schools. This is no doubt due to the fact that most of the children in that school come of foreign parentage. Yet the Chapin School compares favorably with the Monroe standards.

The following tables show the scores made in Winchester in 1918 and in 1920. It is interesting to note that the score in 1920 is much higher, both in rate and in comprehension, than in 1918.

Comparison of speed of silent reading.

Grades.	IV	V	VI	VII	VIII
December, 1918	83.6	84.3	113.0	112.0	98.0
May, 1920	106.6	108.7	117.7	119.0	126.4

Comparison of comprehension in silent reading.

Grades.	IV	V	VI	VII	VIII
December, 1918	12.7	14.7	20.6	21.4	22.3
May, 1920	19.0	20.5	26.4	28.5	34.0

THE STONE REASONING TEST IN ARITHMETIC.

Although no very scientific standards for reasoning ability in arithmetic have been developed, the Stone Reasoning Test is used more than any other test of this nature. The test is printed here.

(Solve as many of the following problems as you have time for; work them in order as numbered:)

1. If you buy 2 tablets at 7 cents each and a book for 65 cents, how much change should you receive from a two-dollar bill? (1.0.)

2. John sold 4 Saturday Evening Posts at 5 cents each. He kept one-half the money and with the other half he bought Sunday papers at 2 cents each. How many did he buy? (1.0.)

3. If James had 4 times as much money as George, he would have $16. How much money has George? (1.0.)

4. How many pencils can you buy for 50 cents at the rate of 2 for 5 cents? (1.0.)

5. The uniforms for a baseball nine cost $2.50 each. The shoes cost $2 a pair. What was the total cost of uniforms and shoes for the nine? (1.0.)

6. In the schools of a certain city there are 2,200 pupils; one-half are in the primary grade, one-fourth in the grammar grades, one-eighth in the high school, and the rest in the night school. How many pupils are there in the night school? (1.4.)

7. If 3½ tons of coal cost $21, what will 5½ tons cost? (1.2.)

8. A news dealer bought some magazines for $1. He sold them for $1.20, gaining 5 cents on each magazine. How many magazines were there? (1.6.)

9. A girl spent one-eighth of her money for car fare, and three times as much for clothes. Half of what she had left was 80 cents. How much money did she have at first? (2.0.)

10. Two girls receive $2.10 for making buttonholes. One makes 42, the other 28. How shall they divide the money? (2.0.)

11. Mr. Brown paid one-third of the cost of a building; Mr. Johnson p one-half the cost. Mr. Johnson received $500 more annual rent than Brown. How much did he receive? (2.0.)

12. A freight train left Albany for New York at 6 o'clock. An express tr left on the same track at 8 o'clock. It went at the rate of 40 miles an ho At what time of day will it overtake the freight train if the freight train st after it has gone 56 miles? (2.0.)

The time allowance is exactly 15 minutes. The problems are graded in difficulty, each problem having a score value commensurate with its difficulty. No credit was allowed for partially correct or partially complete answers.

Results of the reasoning test.

Schools and grades.	Pupils.	Total examples attempted.	Total examples correct.	Per cent of accuracy.	Total credits.	Average credits per pupil.	Average attempts per pupil.	Average examples right per pupil.
Chapin:								
IV	17	179	20	11.1	23.6	1.4	10.5	1.2
V	10	107	16	15.0	16.0	1.6	10.7	1.6
V	28	283	89	31.4	90.4	3.3	10.1	3.2
VI	30	289	174	60.5	211.6	7.1	9.6	5.8
Gifford:								
IV	14	116	41	35.3	42.4	3.0	8.3	3.0
V	12	109	42	38.5	44.6	3.7	9.0	3.5
V	38	331	130	39.3	140.1	3.7	8.7	3.4
Highland:								
IV	12	113	20	17.7	19.0	1.6	9.4	1.7
Mystic:								
IV	12	130	40	30.7	36.8	3.1	10.8	3.3
Prince:								
VI	35	328	171	52.1	190.4	5.4	9.0	5.0
VII a	40	412	208	50.5	270.8	6.8	10.3	5.2
VII b	25	255	126	50.9	136.6	5.5	10.2	5.0
Rumford:								
IV	21	184	90	48.8	93.8	4.5	8.8	4.3
Washington:								
IV	13	97	32	33.0	34.2	2.6	7.4	2.4
V	22	151	47	31.1	49.0	2.2	6.8	2.1
Wadleigh:								
VI-7	40	415	258	62.1	304.6	7.6	10.4	6.5
VI-8	32	311	156	50.1	185.4	5.8	9.4	4.9
VII-5	37	395	246	62.3	280.6	7.6	10.7	6.7
VII-6	35	364	258	72.9	313.6	9.0	10.4	7.4
VIII-1	33	358	251	72.1	320.8	9.7	10.8	7.6
VIII-2	39	400	278	69.6	342.0	8.8	10.3	7.1
VIII-3	38	388	232	60.0	268.2	7.1	10.2	6.1
VIII-4	36	392	306	78.0	413.6	11.5	10.9	8.5
Wyman:								
IV	34	292	40	13.7	40.6	1.2	8.6	1.2
V	31	278	124	44.6	130.2	4.2	9.0	4.0

Grade averages in the reasoning test.

Grade.	Pupils.	Total examples attempted.	Total examples correct.	Per cent of accuracy.	Total credits.	Average credits per pupil.	Average attempts per pupil.	Average examples right pupil.
Grade IV	123	1,111	283	25.5	290.4	2.4	9.0	2.3
Grade V	141	1,259	448	34.8	470.3	3.3	8.9	3.2
Grade VI	137	1,344	759	56.4	892	6.5	9.8	5.5
Grade VII	137	1,426	838	58.8	1,001.2	7.3	10.4	6.1
Grade VIII	146	1,538	1,067	69.4	1,344.6	9.2	10.5	7.3

Winchester compared with other communities in average credits per pupil.

Cities.	Grades.				
	IV	V	VI	VII	VIII
Winchester	2.4	3.3	6.5	7.3	9.2
Brookline, 1916	......	4.0	6.2	......	......
Butte, Mont.	......	2.2	3.9	5.8	7.7
Salt Lake City	......	3.7	6.4	8.6	10.5
Boston, 1916	......	......	4.4	5.6	7.6
Starch standards	1.0	1.6	3.0	4.0	6.4
Fall River, 1916	......	......	5.0	7.6	......

OBSERVATIONS ON THE REASONING TEST.

Such a test as this throws light on two important phases of the arithmetic work of the schools—the rate of speed with which children solve reasoning problems and the accuracy of their work. Given the number of pupils in the classes and the number of examples attempted, and the average rate per pupil can easily be found. Given, in addition, the number of examples solved correctly, and the average of accuracy for classes, for grades, for schools, and for the entire system can be determined. The preceding tables show these facts for Winchester.

The Winchester medians are for the most part higher than any of the other scores, with the exception of the Salt Lake City scores. The Brookline and Winchester scores are practically the same.

It is noticeable that Winchester, although falling below the other communities in scores made in the fundamental operations, does relatively better than the same communities in the problem test, which requires mastery of the fundamental processes and reasoning power as well. It should also be noted that grade 8, instead of falling below grade 7, as in the Courtis tests, is now substantially above. These facts suggest that Winchester may have struck a proper balance in the amount of drill in arithmetic.

2. IN THE HIGH SCHOOL.

An attempt has been made by the survey commission to measure the results of the teaching in the Winchester High School by means of some of the tests that have lately been devised for the achievement of pupils in high-school subjects. Relatively few of these high-school tests have as yet been thoroughly standardized; and therefore the results are relatively far less significant than the results in elementary work, wherein the tests used afford norms for comparison based on the achievements of large numbers of pupils in many typical localities. Nevertheless, it was thought desirable to use as many such tests as were available and could be given without too much disturbance of the school program. In making choice among available tests the aim was, as far as possible, to select those which seemed to have the most merit for testing purposes for the type of school under investigation, giving preference, where there was opportunity for choice, to such as have been most thoroughly standardized or have been used in other surveys. Thus the results of the tests, to some extent at least, afford a means of comparing the results of teaching in Winchester High School with that in other schools.

Such comparison is useful as an end in itself; but perhaps the greatest value in the tests consists in giving the teachers experience in their use. By such means only can teachers be thoroughly convinced of the utility of objective measurement of the results of their work. Moreover, it is only by much experience with the tests that the enthusiasm and initiative of teachers can be enlisted in the work of improving, standardizing, and extending them, so that they can be used as measuring rods for evaluating the absolute achievements of pupils, the rates of their progress in learning, and the relative merits of the different methods of instruction that may be used.

The tests were given by the teachers with the assistance and under the general direction of a member of the survey commission.

ALGEBRA TESTS.

Monroe's Standard Research Tests[1] in Algebra were given on May 4 to all pupils in the ninth grade and to the 16 pupils of the twelfth grade in the class in review algebra, those reviewing the subject in preparation for college entrance examinations.

The contents of the tests are as follows:

I. Multiplication of a binomial by a numerical factor, 39 examples typical of the 7 possible forms. 1½ minutes.

II. Reduction of fractional expressions to a common denominator. 3 minutes.

III. Finding the value of x in equations of the form $\pm ax=\pm b$, leaving the result in fractional form. 27 examples. 1 minute.

IV. Transposition. 14 examples. 2 minutes.

V. Collection of terms. 14 examples. 3 minutes.

VI. Complete solution of simple equations. 14 examples, 12 minutes.

The first four tests were given on one day, and the last two on the following day. The tests were scored by the teachers, and the report blanks filled according to the printed directions accompanying the score sheets. The collective results are presented in the tables which follow.

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[1] For more detailed information about these tests, see Monroe, De Voss, and Kelly, Educational Measurements, Houghton, Mifflin Co., 1917, pp. 224–33. Also School Review, 23: 159–171.

Monroe's Standard Research Tests in Algebra. (Speed.) Grade IX.

Number attempted.	Tests.					
	I	II	III	IV	V	VI
0	....	2	0	0	0	2
1	....	2	0	0	0	2
2	....	4	2	0	1	2
3	....	12	5	1	0	4
4	5	9	5	1	3	2
5	1	21	10	1	1	7
6	0	9	6	9	4	10
7	1	2	4	19	9	7
8	2	2	5	9	7	10
9	7	0	5	9	8	8
10	5	0	4	9	7	9
11	5	0	4	2	11	0
12	8	0	3	0	7	0
13	11	0	3	1	1	0
14	6	0	2	2	3	0
15	2	0	4	0	0	0
16	4	0	0	0	0	0
17	3	0	0	0	0	0
18	1	0	1	0	0	0
19	1	0	0	0	0	0
20	1	0	0	0	0	0
21-27	0	0	0	0	0	0
Total	63	63	63	63	62	63
Median W. H. S	12.7	5.1	7.9	8.1	9.7	7.4
Standard	12.5	4.6	9.0	8.8	10.7	7.7
Difference	+0.2	+0.5	−1.1	−0.7	−1.0	−0.3

Monroe Standard Research Tests in Algebra. (Accuracy, per cent correct.) Grade IX.

Per cent correct.	Tests.					
	I.	II.	III.	IV.	V.	VI.
100	30	1	35	35	8	0
90-99	11	0	2	2	12	0
80-89	5	2	5	12	13	0
70-79	7	1	2	6	8	0
60-69	0	6	4	2	5	2
50-59	1	5	2	1	8	5
40-49	0	2	0	0	2	6
30-39	2	6	3	0	0	4
20-29	5	9	1	1	1	6
10-19	0	1	1	1	0	10
0-9	2	30	8	3	5	30
Total	63	63	63	63	62	63
Median W. H. S	98.6	20.6	100	100	81.5	11.5
Standard	96.0	39.0	100	96	77.0	32.0
Difference	+2.6	−18.4	0	+4	+4.5	−20.5

Monroe's Standard Research Tests in Algebra. (Speed, number attempted.)
Grade XII.

Number attempted.	Tests.					
	I	II	III	IV	V	VI
2	....	2	....	....	....	....
3	....	1	....	....	....	....
4	....	5	....	....	....	....
5	....	0	....	....	....	1
6	....	2	1	2	....	2
7	....	5	1	1	....	3
8	....	1	0	3	1	4
9	....	....	2	3	1	3
10	1	....	2	1	1	2
11	1	....	1	2	2	0
12	0	....	0	2	3	1
13	1	....	2	0	3	....
14	0	....	3	2	5	....
15	2	....	1	....	....	....
16	4	....	0	....	....	....
17	1	....	0	....	....	....
18	2	....	2	....	....	....
19	1	....	0	....	....	....
20	1	....	1	....	....	....
21	0	....	....	....	....	....
22	0	....	....	....	....	....
23	1	....	....	....	....	....
24	1	....	....	....	....	....
Total	16	16	16	16	16	16
Median W. H. S	16.7	5.0	13.5	9.7	13.0	8.5
Standard G. IX	14.5	5.4	11.5	10.2	11.2	8.3
Difference	+2.2	−0.4	+2.0	−0.5	+1.8	+0.2

Monroe's Standard Research Tests in Algebra. (Accuracy, per cent correct.)
Grade XII.

Per cent correct.	Tests.					
	I	II	III	IV	V	VI
100	9	0	11	10	3	0
90-99	4	0	2	3	6	1
80-89	2	2	1	2	7	0
70-79	1	5	0	0	0	2
60-60	0	2	0	1	0	2
50-59	0	2	0	0	0	8
40-49	0	0	1	0	0	2
30-39	0	0	1	0	0	3
20-29	0	2	0	0	0	1
10-19	0	0	0	0	0	0
9-0	0	3	0	0	0	2
Total	16	16	16	16	16	16
Median W. H. S	100	65	100	100	91.7	50
Standard C IX	96	39	100	96	77	32
Difference	+4.0	+26.0	0	+4.0	+14.7	+18.0

By comparing the medium speeds of the 63 ninth-grade algebra pupils in Winchester High School with Monroe's standard median it will be seen that the median Winchester speed is nearly the same as the median speed of the 2,000 pupils in 24 cities from whose scores the standard medians are derived. The tendency of Winchester pupils is to work one less example in Test III, finding the value of x, and to work one less in Test V, collecting terms. In the other tests, the differences are fractional, two being lower and two higher than the norm.

In accuracy Winchester makes a good showing on the four easiest tests and a very poor showing on the two most difficult ones—II, reduction of fractions, and VI, complete solution of simple equations. In each of these two tests 30 pupils out of 63, or nearly half, were unable to solve correctly more than 1 example out of every 10 that they attempted. Considering the easy character of these examples, and notwithstanding the time limits, which, of course, were applied to all the 2,000 pupils with whom they are compared, these pupils have shown themselves to be very inaccurate in doing the relatively more difficult work.

It is, of course, too late for any suggestions from the commission for applying remedies in the care of this class; but precautions may be indicated which may prevent a repetition of these deficiencies next year.

1. Use similar tests at frequent intervals, study individual papers, diagnose weaknesses, and prescribe and enforce an adequate amount of corrective practice and rapid drill with many easy examples involving the processes in which the students prove themselves to be weak. By using Monroe's examples as models, the teacher can make up examples that are like them, but with different letters and numerical factors. These will have approximately the same degree of difficulty and the same forms as the examples of the original tests.

2. Make three recitation sections in algebra in place of the two oversized ones; and as far as the limitation of the school-time schedule will admit, group the "fast" pupils in one, the "medium" pupils in another, and the "slow" pupils in the third. Adapt the subject matter, the methods and the speed in each group to the median ability of the group, and shift pupils from one group to another when it is found that they will do better work in consequence of such a shift. This plan might be more easily feasible if the division were made at the beginning of the year on the basis of the results of a group test of general intelligence, such as the Army Test or the Otis Test or the Haggerty Test, and the three-group principle applied in all studies in which the members enrolled are large enough.

Besides being useful in measuring the results of teaching and tes ing out methods and devices, these objective tests, like the Courti arithmetic test, should find perhaps their greatest usefulness as means of diagnosing the deficiencies of individual pupils, so both teacher and pupil may know in just what processes the pupil's weak nesses lie. When this is known additional practice on the processe wherein he is deficient may be provided for him. He will then hav a strong incentive to correct by intensive application the lack of specific skills which cause his general weakness.

Comparison of the median speeds of the Winchester senior review pupils with Monroe's ninth-grade standards shows that the median speeds for the various tests are very close to the ninth-grade standards. They slightly exceed the standard median speed in I, multiplication of binomials by single numerical factors; in III, finding the value of x in equation of the form $\pm ax = \pm b$; in V, collection of terms; and in VI, the complete solution of simple equations. They fall slightly below in speed in III, reduction of fractions to a common denominator, and in IV, transposition. With all these operations there are wide and not at all regular variations among them in speed.

With regard to accuracy these seniors attain median grades of 100 per cent in the three easiest tests, I, III, and IV; but more than half of them are 100 per cent accurate on the examples attempted in these processes.

In V, the next hardest, the median accuracy is 91.7 per cent. In II and VI, the most difficult, their median accuracy as expressed in per cent correct of those attempted exceeds median ninth-grade accuracy by 26 and 18, respectively.

It is not surprising that seniors do better than ninth graders. They should be expected to. Three years of high-school training should do much for them. So should three years of growth and general experience. Besides that, there are only 16 in the class; so they should get the benefit of approximately 50 per cent more individual attention than can be given to an ordinary sized ninth-grade class, while yet these numbers are sufficient to insure group enthusiasm. Finally, all this being allowed, there is a presumably still greater factor to be considered. Probably most of the bunglers and incompetents have been eliminated. Not all these have dropped out, however. The distribution table shows that 3 out of the 16 attained less than 10 per cent accuracy in reducing fractions. That is, if these 3 attempted 10, they got 1 right.

With regard to the senior review class, then, the test has informed us that the seniors who have taken the review work are much more accurate than the ninth graders, but only a very little better in speed.

It would be interesting and instructive next year for the teacher of this class to give the test to *all* the seniors and to learn by a comparison of median grades for the practiced and unpracticed groups just how much of the improvement of the senior-algebra students is due to the instruction of the review class and how much to the other factors mentioned.

The defective point of the Monroe tests from the standpoint of testing ability in algebra is that it tests only the abilities in processes that should be reduced to automatism. There are in it no problems that require the application of algebraic principles to the solution of problems. They do not measure thinking power except in so far as automatic expertness in manipulating algebraic symbols correlates with thinking power.

HENMON'S LATIN TESTS.[a]

Vocabulary Test A and Sentence Test I were selected. Test A is one of four equally difficult tests any one of which may be chosen. It contains 50 Latin words the English equivalents of which are to be given by the pupil. These are selected from 239 words that are common to 13 beginner's Latin books and also to Caesar, Cicero, and Virgil. Each word is assigned a scale value according to its difficulty, as determined by the percentage of a large number of pupils who translated it correctly, taking into account the distribution of the pupils in ability according to the normal probability curve. The words are arranged in the order of their increasing difficulties or scale values from *bellum* (0.04) to *quisque* (4.7). Perfect score 107. Sentence Test I consists of 10 easy Latin sentences to be translated into English. They contain no word not included in the list of 239 words above mentioned. Each sentence is assigned a scale value according to its difficulty ranging from "*Ubi sunt copiae hostium*"? (1.0) to *Velim fratrem tuum roges, ne nos relinquat* (4.6). They increase in difficulty or scale value by steps of 0.4. Perfect score 28.0.

These two Latin tests were given to the pupils of all Latin classes in the four high-school grades on Tuesday, May 5. The time to be allowed has not been standardized, but following Prof. Henmon's suggestion 10 minutes were allowed for the vocabulary test and 15 minutes for the sentence test. These allotments proved to be sufficient. The results are given in the table below.

Henmon's Latin tests.

	Grade IX.	Grade X.	Grade XI.	Grade XII.
VOCABULARY TEST A.				
Median number correct:				
Winchester High School	36.0	44.0	47.0	48.3
Henmon's Standards	33.0	39.0	44.0	45.0
Median per cent correct:				
Winchester High School	72.0	88.0	94.0	96.6
Henmon's Standards	66.0	78.0	88.0	90.0
Median sum of scale values:				
Winchester High School	70.3	87.7	98.7	101
Henmon's Standards	71.0	84.0	95.0	97
SENTENCE TEST I.				
Median sum of scale values:				
Winchester High School	13.6	20.0	26.2	28.
Henmon's Standards	10.0	13.8	18.2	21.
Median percentages:				
Winchester High School	48.6	71.4	93.6	94.
Henmon's Standards	25.6	49.3	65.1	74.

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[a] These tests and their derivation and uses are fully described in the Journal of Educational Psychology, 8: 515–38, 589–99, Nov.–Dec., 1917. They are on sale by Dr. V. A. C. Henmon, University of Wisconsin, Madison, Wis.

From a glance at the results two facts are apparent:

1. There is a consistent increase in median ability in both tests from the ninth graders to the seniors, as there should be, indicating steadily growing power in the classes from grade to grade in both vocabulary and translation.

2. In each of the four grades the median ability of the Winchester pupils, as measured by the tests, is distinctly higher than the median ability of the corresponding grade in about a score of high schools on the achievements of whose pupils the standards are based. There is a slight exception in the case of the median sum of scale values in vocabulary in the ninth grade; but the discrepancy is small and may be accidental or might be reversed in another test or with a larger number of pupils. Another interesting feature is that the superiority of the Winchester pupils with respect to the standards is noticeably greater in the case of the sentence test than in that of the vocabulary test. In other words, they are superior in the higher and more significant kind of ability. As is usual there were wide variations among the scores of the individual pupils, some making scores far above the median and others far below it. Incidentally, an interesting fact with reference to the influence of textbooks turned up in connection with the tests. The first-grade girls are segregated from the boys and use a text which stresses vocabulary work, while the boys use another text which stresses sentence work. Both groups ran true to form, the girls doing better than the boys with the vocabulary test and the boys better than the girls with the sentence test. This might be interpreted as a sex difference, if the books used in the two classes had been the same; but even in that case it could not be accepted as a conclusion without further testing.

To the extent then that these tests are valid in measuring efficiency in the teaching of Latin the results are quite positively creditable to the present conduct of that department of the school work. This should be gratifying to the administration and the community, because in the recent past complaints have been made about the teaching of this subject; and these complaints seem to have been founded on some really existing defects in the teaching. Of these, the relatively high percentage of eliminations and failures in that subject shown in a foregoing table give a noteworthy indication. The test indicates that the changes made to remedy this condition have been effective.

HANDSCHIN'S FRENCH AND SPANISH TESTS.[a]

Previous to the survey, the teachers of French and Spanish had ordered and received the silent reading tests in these languages, designed by Prof. Handschin, of Miami University, Oxford, Ohio. One of these tests had been given previous to the survey, and the other was given during the progress of the field work. These tests are modeled after the Kansas Silent Reading Test, and consist of problematic questions—12 in French in the one case and 14 in Spanish in the other. Each question is to be answered by a single word in French or Spanish, according to the language of the test, and therefor each answer is marked either right or wrong. They are not yet standardized by the evaluations of the questions, so the teacher is directed to assign 3 points to each correct answer. Perfect score for French, 36; for Spanish, 42.

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[a] These tests may be purchased from the World Book Co., Yonkers, N. Y.

The following table gives the median scores:

Handschin's French and Spanish Tests, Winchester High School.

Subject.	Grade.	Pupils.	Points made (by correct answers).								
			Below 8.	8–12	13–17	18–22	23–27	28–32	33–37	38–42	Median.
French IC	Tenth	14	4	4	4	2					11½
French IA	Tenth	16	8	5	1	2					7½
French IB	Tenth	14	4	6	1	2	1				9
French IIA	Eleventh	18	1	3	4	7	2		1		18
Standard [1]											9
Spanish IA	Tenth		0	1	4	10	2				18
Spanish IB	Tenth		0	3	3	2	0	0	1		15
Spanish II	Eleventh		0	6	6	4					15
Standard [2]											17

[1] Handschin's tentative standard for first-year French, 9th grade.
[2] Handschin's tentative standard for first-year Spanish, 9th grade.

It should be noted that the Handschin tentative standards are for the ninth-grade pupils in first-year French or Spanish, while these pupils who are in their first year's study of these languages are in the tenth grade, and therefore approximately a year older than those on whose achievements the standards are based. Also second-year pupils in both languages are included, and these are in the eleventh grade. The standards are not very significant, being based on the achievement of only a few pupils.

It will be seen that, of the three sections in first-year French, the median of one equals the tentative standard for the ninth grade, while one is higher and the third is lower. That in the second-year or eleventh-grade French is *double* the ninth-grade standard.

In Spanish one tenth-grade first-year section makes a median score above the tentative standard, and the other first-year section and the second-year section are two points below the standard. These results do not seem to point to any significant interpretations as to the general quality of the teaching, but they suggest several pertinent queries for which the teachers should endeavor to find answers:

1. Why did French 1C section do nearly 25 per cent better than French 1B (whose performance was equal to the tentative standard), while French 1A did 16⅔ per cent worse than 1B?

2. Why does Spanish 1A section do 20 per cent better than Spanish 1B? It is one point above the Handschin's tentative median, while 1B is two points below.

3. The median performance of French 11A, with its extra year of study, is just about double the median performance of the three first-year sections taken collectively; a superiority of 100 per sent from one year to the next is rather unusual with most tests. What are the causes of it? How, if possible, may the teacher take advantage of the underlying causes of this success in planning to improve next year's work?

4. Why have the second-year Spanish pupils done no better than the first-year Spanish pupils?

These questions suggests the value of such tests in diagnosis.

SACKETT'S SCALE IN UNITED STATES HISTORY.

This test was given to the 45 pupils of the senior class in American history and civics.

Test I calls for the reason for the historic importance of each of 10 dates. Time, 4 minutes.

Test II gives the names of 10 men, and the pupil is required to indicate for what each was celebrated. Time, 5 minutes.

Test III names 10 historic events of importance, and the pupil is asked to give the name of the man prominently connected with each. Time, 3 minutes.

Test IV lists 10 important historical terms, such as second Continental Congress, Dred Scott Decision, etc.; and the pupil is asked to define each in a short sentence. Time, 7 minutes.

Test V asks the pupil to make a list of all the political parties that have arisen in the United States since the Revolution, and to state the principle advocated by each. Time, 5 minutes.

Test VI asks the student to indicate the great decisions or epochs of United States history. Time, 5 minutes.

Test VII presents an outline map of the United States on which the pupil is to draw the land boundaries at the close of the Revolution, and indicate, by drawing boundaries and naming, what have been the various acquisitions of territory since that date. Time, 5 minutes.

Sackett's Scale in United States History, Grade XII.

Score.	Number of pupils making score indicated.						
	Test I.	Test II.	Test III.	Test IV.	Test V.	Test VI.	Test VII.
350 and above			1				
340–349				2			
330–339				1			
320–329			1	1		4	
310–319						3	
300–309			2	1			
290–299	1	3	1			5	
280–289	1	1		1			
270–279		1	3				1
260–269	1	4	2				1
250–259		2		2	2		1
240–249	1		2			5	2
230–239	1	1	1	2	1		
220–229	1	1	2	1			4
210–219	3	1	1	4	10		1
200–209	1	3		1		9	
190–190	2	1	1	2	2		
180–189	2		1	3			
170–179	3	1		1	5		3
160–169	1	3	2	3		3	2
150–159	2	1	1	2	8		
140–149	4	1	3	3			2
130–139		2	1	1			2
120–129	2		2		5	5	2
110–119	9	2	2	1			3
100–109	2	2	3	1	5		
90–99	2	2	2	4		1	6
80–89	1	2		1	3	5	2
70–79	2	1	5	3			
60–69	1	1	1		3		5
50–59		2					
40–49	1	1	2	2	1		
30–39	1	3	3	1			2
20–29		2		1		1	
10–19							
0–9		1				4	6
Total	45	45	45	45	45	45	45
Median	143.7	155	145	168.3	156.9	203.9	115
University median	154	179	126	174	142	365	146
Normal school	149	176	171	152	134	203	107
High school	90	121	106	97	109	141	81

Directions for conducting and scoring the test are given on the front and back pages of the pamphlet.[4]

The results of this test, given in the accompanying table, show the usual wide variations in the scores. They show also that the performance of this class is far above the median high-school senior's performance, as expressed by Sackett's standards.

In Test V on political parties the median score of Winchester exceeds (by 14.9 points out of a possible 431) the median score of the 757 university students on which the university standards are based.

In Test III the Winchester median exceeds that of the university students, but is less than that of the 207 normal school students, who in this test stand highest.

In Test IV, VI, and VII the Winchester medians are higher than those of the normal school students but lower than those of th university students.

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[4] For full accounts of this test see Jour. Educ. Psych., 10 : 345–19, Sept. 19, an 8 : 257–74, May, 1917. They are on sale by Bu. Educ. Research, Univ. of Ill., Urbana, Il

In Tests I and II the medians for Winchester lie between those for the normal schools and those for the high schools, and are nearer the former than the latter. The high-school medians are based on the performance of 668 pupils.

These results are very creditable to the school and indicate live teaching of history.

THURSTONE'S PHYSICS TEST I.[5]

This is one of a series of tests designed by a committee of the Society for the Promotion of Engineering Education to replace the ordinary college entrance examination and to serve as a part basis for educational and vocational guidance after the student has matriculated.

It consists of 25 problems, each of which requires knowledge of an important principle of physics and the ability to think straight. The problems are simple and at the same time very interesting. They constitute an excellent test of general mental proficiency in this subject.

The time allowed is 30 minutes, and there are more problems than any but a very exceptional student might be expected to solve in that time.

Every answer is marked either right or wrong, and each problem correctly solved counts one point.

The problems have not yet been evaluated and standardized as to difficulty, and no speed norms have yet been determined.

The table which follows shows the performance of the senior class of 10 boys on this test.

It tells for each problem the number out of the 10 boys who solved it correctly. It also gives the speed and accuracy distributions for the 10 boys.

The median score for the Winchester class is 9.5 problems solved correctly in 30 minutes. Thurstone's norm, taken from his curve for 472 college freshmen and candidates for college entrance, is 10.3. As a matter of fact, half the boys did 11 or better, i. e., 1½ more than the theoretical median. We may say, therefore, that this group of boys, as a group, did nearly or quite as well as the 472 on whose performance the norm is based, half of them ranking in the better half of the distribution of the 472 and half of them in the poorer half of this distribution.

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[5] These tests can be bought from Prof. L. L. Thurstone, Carnegie Institute of Technology, Pittsburgh, Pa.
The problems are reprinted in School Science and Mathematics for February, 1920.

THURSTONE'S PHYSICS TEST V. GRADE XII.

Problem number.	Number of pupils answering each problem correctly.	Speed distribution—Number of pupils who attempted each number of problems.	Score distribution—Number of pupils who solve correctly each number of problems.	Per cents correctly solved of those attempted.	Accuracy distribution—Number of pupils getting each per cent correct.
1	3			0- 9	
2	5			10-19	
3	1			20-29	1
4	3			30-39	1
5	5		1	40-49	
6	4		2	50-59	4
7	7			60-69	3
8	9		2	70-79	
9	5			80-89	1
10	8			90-99	
11	10		2	100	
12	1		1		
13	6	2			
14	1				
15	5		1		
16	4	1			
17	2				
18	1				
19	2	2	1		
20	6				
21	2	2			
22	3	1			
23	3	2			
24	2				
25	0				
Number of pupils		10	10		10
Medians		20	9.5		57.5
Thurstone's norm			10.3		

This means that they make a satisfactory showing among the candidates for admission to engineering colleges from other schools. This achievement is on the basis of a much fairer and more efficient test than those usually given for college entrance. That it is a superior test was evidenced by the reaction to it of the boys themselves. They entered into it with zest, and expressed themselves as greatly pleased with it and interested by it. That they were sincere can not be questioned, for after time was called they remained in the room with the member of the commission and the teacher, enthusiastically discussing the different problems until the latter was obliged to send them away to their other work. They agreed quite positively and wholly spontaneously that this was a much fairer type of test of ability than the eastern college examinations; and they have a good basis for judgment, for the college entrance questi are used frequently as a basis for practice and testing during near the close of the year.

THE ENGLISH COMPOSITION TEST.

A topic of general interest to the pupils was assigned with warning when they appeared in their English classrooms on Ma

The time given was 40 minutes. The teachers who had previous experience in the use of Thorndike's extension of the well-known Hillegas "Scale for the Measurement of Quality in English Compositions by Young People," scored the papers. The Nassau County extension of the Hillegas Scale, by Trabue, was used. This scale was selected because it has been used in several other surveys, and therefore gave a wider basis for comparison.

The annexed table gives the results. The steps of the scale are printed in the left-hand column, and the number of pupils whose compositions were assigned each of the scale values is given in the successive columns of the right of it. These are distributed by grades, the totals for each grade and for the school being given in the last five columns. In the columns 2 to 9, each of the four-grade distributions is segregated into two groups—those in the commercial and the general curriculum, and those in the college and the technical preparatory curriculm. This enables a comparison to be made between the college preparatory and the noncollege preparatory groups, as to their ability in composition as measured by the scale.[6]

English composition—Numbers of pupils who wrote compositions of the qualities indicated at left.

Composition quality.	Grades.												
	IX		X		XI		XII		IX	X	XI	XII	
	Commercial, general.	College, technical.	Commercial, general.	College, technical.	Commercial, general.	College, technical.	Commercial, general.	College, technical.	Total.	Total.	Total.	Total.	School.
2.8	1	......	......	......	......	......	......	1	1	......	......	1	1
5.0	26	10	1	1	3	......	......	......	36	2	3	......	41
6.0	26	28	30	14	21	7	10	3	54	44	28	13	139
7.2	3	10	10	12	8	14	15	13	13	22	22	28	85
8.0	2	......	......	1	3	......	4	5	2	1	3	9	15
Total	58	48	41	28	35	21	29	22	106	69	56	51	281
Winchester High School	5.58	6.05	6.22	6.52	6.41	6.85	6.90	6.94	5.83	6.31	6.48	6.89	......
St. Paul, Minn	......	......	......	......	......	......	......	......	5.83	5.66	6.27	6.64	......
Mobile, Ala	......	......	......	......	......	......	......	......	6.69	6.93	7.24	7.54	......
Mobile Co., Ala	......	......	......	......	......	......	......	......	5.56	6.38	6.05	6.77	......
Nassau Co., N. Y	......	......	......	......	......	......	......	......	5.00	5.25	5.68	5.94	......
So. River, N. Y	......	......	......	......	......	......	......	......	5.18	5.02	5.95	6.30	......
Trabue's Standards	......	......	......	......	......	......	......	......	6.00	6.50	6.90	7.20	......

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[6] For a full account of this scale see "Supplementing the Hillegas Scale," published by Teachers' College, Columbia University, N. Y., Bureau of Publications. This scale, the Hillegas Scale, and the Thorndike Extension of the Hillegas Scale, may be purchased from the same bureau.

The table reveals the following facts:

1. Of the ninth and twelfth grade pupils, the range in quality is from 3.8 (about fifth grade ability) by 1 pupil to 8 by 2 pupils. The range in the tenth and eleventh grades is from 5 to 8. Out of 281 pupils, 180, or 64 per cent, wrote compositions of quality 5 or 6; of the seniors 37 out of 51, or 72.6 per cent, attained quality 7.2 or 8.

2. Quality 7.2 was attained by 12.3 per cent of the ninth grade, 31.9 per cent of the tenth grade, 39.3 per cent of the eleventh grade, and 55 per cent of the seniors.

3. Quality 8 was attained by 1.8 per cent of the ninth grade, 1.4 per cent of the tenth grade, 5.4 per cent of the eleventh grade, and 17.6 per cent of the seniors.

4. The median ability of the Winchester pupils as judged by their teachers is very close to that of the St. Paul high school pupils as judged by Dr. Trabue and his assistants. The median scores of the eleventh and twelfth grades in Winchester are a little higher than those of the corresponding grades in the St. Paul high school, and that of the tenth grade a little lower. No pupil in either Winchester or St. Paul reached quality 9. The scores of Mobile, Ala., are much higher than those of St. Paul or Winchester, both of which are below Trabue's "Reasonable Standards."

5. The college preparatory pupils in all four grades are distinctly better than the commercial and technical in composition ability. This is what high-school teachers generally would have expected to find. It probably is due to the fact that on the whole the college-bound group have more intellectual capacity and more ambition than the others.

6. On the whole, the test shows that the results of the teaching of English composition in Winchester are about as good as the average elsewhere, and no better. This accords with the judgment made by observing the class work. While the teaching was good all along the line, and was especially to be commended for the care taken in cultivating good English in oral speech, no outstanding feature of very superior quality of work was observed; nor was there any evidence of unusual enthusiasm for literary study in any of the classes. It was just good, conscientious work.

TESTS IN TYPEWRITING.

In the commercial department the standard commercial tests of t Remington and Underwood Companies are given at freque intervals throughout the year, both for practice and for ratin Tests were witnessed during the survey by a member of the commi sion.

The teacher keeps a record of the scores made, and uses them not only for diagnoses, conference, and advice, but also for grading in connection with promotions. It is the practice to promote unconditionally only those who actually make such progress that they can meet commercial requirements. Pupils who do faithful work but are below these requirements are given crédit for graduation, but are shifted to other subjects and are not allowed to go on in typewriting. The same rule is applied in bookkeeping. As these courses are frankly vocational, this policy is obviously a good one.

Too many schools turn out pupils with commercial diplomas who are not capable of doing the kind of work for which they apply. This discredits the school; and it also makes waste of time and money for both employee and employer.

The following tables showing the progress of the eleventh and twelfth grade pupils in typewriting have been compiled from the individual records furnished by the teacher:

Progress of the eleventh and twelfth grades in typewriting.

Juniors (15)—80 practice periods.						Seniors (15)—100 practice periods.					
November.		April.			Rank in gain.	September.		April.			Rank in gain.
Scores.	Rank.	Scores.	Rank.	Gains.		Scores.	Rank.	Scores.	Rank.	Gains.	
28	1	34	4½	6	6	54	1	59	2	5	7
26	2⅓	45	1	19	1	46	2½	60	1	14	2½
26	2⅓	39	2	13	3½	46	2½	49	4⅓	3	9⅓
26	2⅓	30	5½	4	8	43	3	45	5	2	10
25	3	30	5½	5	7⅓	41	4½	49	4⅓	8	4
23	4	26	7	3	9	41	4½	44	6	3	9⅓
22	5	37	3	15	2	40	5½	54	3	14	2½
21	6	34	4½	13	3½	40	5½	49	4⅓	9	3
20	7⅓	28	6	8	4½	38	6	42	7	4	8½
20	7⅓	25	8¼	5	7⅓	37	7½	40	8	3	9⅓
20	7⅓	25	8¼	5	7⅓	37	7½	37	10	0	11
18	8½	25	8¼	7	5½	35	8	39	9¼	4	8½
18	8½	25	8¼	7	5½	33	9	39	9¼	6	6
17	9	15	10	2	10	32	10	39	9¼	7	5
16	10	24	9	8	4½	22	11	39	9¼	17	1
Medians, 21	....	28	....	7	....	40	....	44	....	5	....

The time given for each standard test is 10 minutes. The minimum commercial standard is a rate of 40 words per minute sustained for 10 minutes with a maximum of 10 mistakes. The rules of contest and the printed test materials are those adopted by the Remington and Underwood Companies for their well-known international contests.

The score is found by counting the number of words written, deducting 10 for every mistake, and dividing the result by 10. This gives the number of words per minute, with the penalty for mistakes applied. The minimum standard is a rate of 40 words per minute on new material sustained for 10 minutes, with a maximum limit of 10 mistakes. The progress of the juniors was the result of 80 practice periods (40 minutes) and that of the seniors of 100 practice periods. It will be seen from the tables that the median junior score for the November test was 21 words per minute and the median gain made was 7 words per minute, while for the seniors the median September score was 40 words per minute and the median gain was 5 words per minute.

The final median scores were: Juniors 28 words per minute, and seniors 44 words per minute. Comparing the juniors with the standard it is seen that all of them started below the standard on the November test, but that after 80 practice periods one of them passed the standard and six advanced to between 30 and 40.

The seniors started in the September test with 8 scores of 40 or higher, the highest being 54, and after 100 practice periods 10 of them reached or surpassed the standard of 40 words per minute and of the remaining 5, 1 was 3 words below and 4 were only 1 word below.

This seems to indicate very satisfactory work, which in the judgment of the commission was to be expected from what they observed as to the methods of teaching.

While the results of these studies with the use of tests are far from ideal as means of judging the quality of the teaching, yet they seem to confirm the judgments of the commission, based on observation and on the other criteria used in this report.

Probably, however, they should be most useful in inciting the teachers of Winchester and neighboring schools of the same class to cooperate in thir use, and in comparing the efficiency of teaching methods by means of them and of others that are found to be applicable.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 44

SALARIES OF PRINCIPALS OF HIGH SCHOOLS

By

WILLIAM T. BAWDEN
UNITED STATES BUREAU OF EDUCATION

WASHINGTON
GOVERNMENT PRINTING OFFICE
1920

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Aug. 4. 1921
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INTRODUCTION.

The high school is the pupil's college. Upon its character, its spirit, and its work depend not only the knowledge and skill, but also the ideals and mental attitude of a very large majority of the men and women who will rise to positions of influence in industrial, social, and civic life. The preparation and later success of those who enter schools of higher learning also depend in large measure on the high schools, but the character of the high schools, including both spirit and work, is determined very largely by their principals. The principalship of the high school may well be conceded to be the most important and difficult position in the entire school system, requiring of those who fill it well the highest type of native ability, broad and comprehensive education, much professional knowledge, and great skill in teaching, in organization, in management, and in leadership. Only men and women of such qualifications should be employed in this position. To employ as principals of these schools, organized for boys and girls during the golden period of youth, in the years of early and middle adolescence, any other than men and women of the best ability is to court failure where failure spells disaster more clearly than anywhere else in the school system.

It is, therefore, interesting to know just what are the wages paid principals in the high schools of the United States, to what extent these wages have been increased in the last five or six years, which have been marked by large increases in wages paid in most occupations and in the cost of living.

This bulletin, the result of a recent special inquiry and study made by the Bureau of Education, gives this information for the country as a whole and for each of the several States.

It is interesting to note that the average annual salary for high-school principals for the school year 1919–20 was only $1,504.42—a little more than the average annual wages of good stenographers, about as much as Pullman porters receive in wages and tips (the figures are based on personal investigation), and about $300 less than the annual wages paid rural mail carriers.

It is also interesting to note that within the five years from 1914–15 to 1919–20, during which the cost of living increased about 108 per cent, and wages paid in most occupations increased as much, the average pay of high-school principals only increased 18.8 per cent. Measured by purchasing power, the wages of high-school principals in 1919–20 was only 57 per cent of what it was five years before.

At the wages paid, can we reasonably expect to attract and hold in the principalships of the high schools such men and women as are necessary for the best results?

P. P. CLAXTON,
Commissioner.

SALARIES OF PRINCIPALS OF HIGH SCHOOLS.

Certain facts of interest relating to salaries of principals of high schools are now available as the result of a study just completed by the Bureau of Education.

The study is based on returns from 10,440 high schools located in the 48 States and the District of Columbia. According to reports from the State departments of public instruction, there were 16,258 public high schools in 1917–18, the latest year for which full reports have been received. It appears, therefore, that the following figures on salaries cover approximately 60 per cent of the high schools of the country.

METHOD OF INVESTIGATION.

Each principal was requested to report the amount of salary received for the school year 1919–20, also the salary paid to the occupant of the same position in 1914–15. Of the 10,440 principals reporting for 1919–20, only 7,981 reported the salaries paid in 1914–15.

Average annual salaries were computed for each State by dividing the total amount of salaries received by the number of principals reporting, and for groups of States by dividing the aggregate amount of salaries by the aggregate number of principals.

Next, a distribution of salaries was secured for each State, arranged in groups of $100 under $1,000 and in groups of $250 above that sum.

The actual average was computed for each group of salaries. Table 1 shows the distribution of salaries paid in California and Kentucky, the two States reporting the highest and lowest average annual salaries, respectively.

From this table it will be observed that in 1914–15, in California, 155 of the salaries reported, or almost three-fourths of the total, were included between $1,500 and $2,499; while in 1919–20 nearly the same proportion, or 160 salaries, was included between $2,000 and $3,249. In 1914–15, in Kentucky, 133 of the salaries reported, or 76.4 per cent, were included between $600 and $1,249; while in 1919–20, 170 salaries, or 75.5 per cent, were included between $900 and $1,999.

The average annual salary reported in California increased in five years from $2,137.51 to $2,620.09, or 22.6 per cent; in Kentucky the increase was from $948.03 to $1,189.71, or 25.5 per cent.

TABLE 1.—*Distribution of salaries paid to high-school principals in California and Kentucky, 1914–15 and 1919–20.*

Amount of salary.	California.				Kentucky.			
	1914–15		1919–20		1914–15		1919–20	
	Number.	Average annual salary.	Number.	Average annual salary.	Number.	Average annual salary.	Number.	Average annual salary.
$400–$499					3	$470.00	1	$450.00
500–599					13	544.61	5	551.00
600–699					25	642.40	10	633.50
700–799					18	727.77	14	738.57
800–899	1	$800.00	1	$800.00	23	807.17	18	807.50
900–999					28	908.21	36	923.82
1,000–1,249	1	1,140.00			39	1,085.64	71	1,102.07
1,250–1,499	10	1,319.00	3	1,373.33	11	1,314.54	17	1,333.41
1,500–1,749	38	1,591.31	6	1,629.16	8	1,562.50	25	1,541.80
1,750–1,999	45	1,815.33	18	1,836.11	3	1,833.33	11	1,818.18
2,000–2,249	36	2,066.66	39	2,089.66	1	2,000.00	7	2,050.00
2,250–2,499	36	2,360.55	41	2,400.73			6	2,350.00
2,500–2,749	8	2,575.00	30	2,574.40			2	2,650.00
2,750–2,999	5	2,786.00	22	2,789.54				
3,000–3,249	21	3,000.00	28	3,039.96	1	3,000.00		
3,250–3,499	7	3,314.28	22	3,297.72				
3,500–3,749	5	3,580.00	19	3,563.15			2	3,500.00
3,750–3,999			3	3,860.00				
4,000–4,249			2	4,000.00				
4,250–4,499								
4,500–4,749			1	4,500.00				
	213	[1]$2,137.51	235	[1]$2,620.09	174	[1]948.03	225	[1]1,189.71

[1] Average.

RANKING OF THE STATES.

In Table 2 is presented a summary showing the ranking of the 48 States according to average annual salaries paid to high-school principals. In column 1 of the table the number of high schools in 1917–18 is given for comparison with the number of principals reporting salaries for 1919–20.

The average annual salary reported by the State at the top of the list is more than two and one-fifth times that reported by the State at the bottom. The average annual salary reported by the 12 States in the highest quarter is 60.2 per cent greater than the average salary reported by the 12 States in the lowest quarter. The median average annual salary falls in the group $1,387.20.

In only seven States, reporting 684 schools, or 6.5 per cent of the total, was the average annual salary of the principal reported for 1919–20 in excess of $1,900.

TABLE 2.—*Summary of high-school principals reporting, and average annual salaries for 1919–20, by States.*

States.	Total number of high schools in 1917–18.	Salaries of principals in 1919–20.		Rank of State.
		Number of principals reporting.	Average annual salary.	
United States	16,258	10,433	$1,504.42	......
First quarter	2,472	1,906	2,026.38	......
California	289	235	2,620.09	1
Rhode Island	23	19	2,326.52	2
Massachusetts	269	219	2,285.14	3
Nevada	31	23	2,278.67	4
Arizona	29	19	2,239.21	5
Connecticut	75	51	2,222.37	6
New Jersey	162	118	2,166.27	7
New York	768	610	1,881.37	8
Montana	141	114	1,855.35	9
Louisiana	223	143	1,773.74	10
Wisconsin	585	302	1,770.87	11
New Hampshire	77	53	1,742.83	12
Second quarter	2,919	2,139	1,579.94	......
Colorado	142	112	1,739.73	13
Vermont	79	48	1,731.77	14
Illinois	733	520	1,723.75	15
West Virginia	167	128	1,643.48	16
New Mexico	43	30	1,627.18	17
Washington	372	254	1,588.21	18
Maryland	104	70	1,586.78	19
Florida	152	99	1,563.61	20
Delaware	33	22	1,553.40	21
Wyoming	51	35	1,543.50	22
Utah	47	28	1,520.80	23
Pennsylvania	976	793	1,521.16	24
Third quarter	5,136	3,038	1,388.12	......
Idaho	150	100	1,502.15	25
South Dakota	201	148	1,479.30	26
Minnesota	469	360	1,445.96	27
Mississippi	261	131	1,419.80	28
Oregon	219	161	1,417.32	29
North Dakota	283	222	1,412.74	30
Maine	221	145	[1] 1,387.20	31
Indiana	759	215	1,377.54	32
Arkansas	238	138	1,369.09	33
Oklahoma	484	272	1,363.68	34
Iowa	821	509	1,350.22	35
Ohio	1,020	637	1,325.83	36
Fourth quarter	5,731	3,350	1,264.70	......
South Carolina	225	101	1,297.04	37
Virginia	432	250	1,291.83	38
Georgia	406	212	1,285.55	39
Tennessee	298	176	1,274.90	40
Texas	849	425	1,255.94	41
Michigan	601	365	1,254.32	42
North Carolina	499	284	1,231.62	43
Nebraska	474	326	1,222.26	44
Kansas	610	411	1,221.38	45
Missouri	641	430	1,194.39	46
Alabama	265	145	1,190.09	47
Kentucky	428	225	1,189.71	48

[1] The median average annual salary falls in the group $1,387.20.

NOTE.—The District of Columbia is omitted from this tabulation. There are seven high schools in the District; the salary of the principal is $2,740 in six cases, and $3,000 in one; average, $2,777.14.

Table 3 presents a summary of the salaries reported, by divisions of States, showing averages for 1914–15 and 1919–20, and per cent of increase.

The per cent of increase for the 5-year period ranges from 4.7 per cent, for the North Atlantic States, to 34.8 per cent, for the South Atlantic States. The average for the country is 18.8 per cent. The North Atlantic Division includes 6 of the 12 States in the highest quarter of Table 2, while the South Atlantic Division includes 4 of the 12 States in the lowest quarter of Table 2.

In these five years the cost of living increased 108 per cent, and wages paid in most occupations increased about as much. On this basis of purchasing power, the average wage paid principals of high schools in 1919–20 was only 57 per cent of the average wage for 1914–15.

Table 3.—*Summary of number of high-school principals reporting average annual salaries for 1914–15 and 1919–20, and per cent of increase.*

States.	1914–15		1919–20.		Per cent increase.
	Number of principals reporting.	Average annual salary.	Number of principals reporting.	Average annual salary.	
United States	7,981	$1,267.15	10,440	$1,506.23	18.8
North Atlantic Division (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania.)	1,652	1,692.83	2,036	1,772.47	4.7
North Central Division (Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.)	3,316	1,147.73	4,445	1,411.09	22.9
South Atlantic Division (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.)	867	1,015.46	1,173	1,360.27	34.8
South Central Division (Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Arkansas, Oklahoma.)	1,275	1,030.25	1,655	1,328.40	28.9
Western Division (Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, California.)	871	1,500.23	1,111	1,803.71	20.1

TABLE 4.—*Number of high-school principals reported as receiving specified salaries, 1914-15 and 1919-20, and average salaries, by States.*

Range of salaries.	1914-15		1919-20	
	Principals.	Average salary.	Principals.	Average salary.
Alabama.				
$400- $499..	3	$431.66	1	$480.00
500- 599..	5	542.00	2	542.50
600- 699..	13	637.77	1	630.00
700- 799..	4	710.00	9	723.33
800- 899..	5	808.00	5	822.00
900- 999..	13	915.38	8	958.63
1,000-1,249..	26	1,112.69	33	1,118.18
1,250-1,499..	8	1,368.75	17	1,317.08
1,500-1,749..	26	1,630.38	28	1,541.07
1,750-1,999..	1	1,800.00	19	1,803.68
2,000-2,249..	2	2,000.00	15	2,026.66
2,250-2,499..	....	....	2	2,400.00
2,500-2,749..	....	....	4	2,635.00
2,750-2,999..	1	2,800.00	....	....
3,250-3,499..	1	3,250.00	....	....
4,000-4,249..	....	....	1	4,000.00
Total....	108	[1] 1,159.22	145	[1] 1,190.09
Arizona.				
$700- $799..	1	750.00	....	....
1,000-1,249..	3	1,205.00	....	....
1,250-1,499..	2	1,400.00	2	1,255.00
1,500-1,749..	3	1,643.89	1	1,665.00
1,750-1,999..	3	1,800.00	3	1,833.33
2,000-2,249..	1	2,000.00	3	2,090.00
2,250-2,499..	....	....	4	2,325.00
2,500-2,749..	....	....	4	2,550.00
2,750-2,999..	....	....	1	2,900.00
3,000-3,249..	1	3,000.00	....	....
4,000-4,249..	....	....	1	4,200.00
Total....	14	[1] 1,606.90	19	[1] 2,239.21
Arkansas.				
$400- $499..	2	440.00	....	....
500- 599..	....	....	2	510.00
600- 699..	21	649.28	5	655.00
700- 799..	7	737.85	6	728.33
800- 899..	16	806.25	6	800.00
900- 999..	11	913.63	12	935.00
1,000-1,249..	33	1,080.45	54	1,291.28
1,250-1,499..	5	1,354.00	17	1,359.70
1,500-1,749..	7	1,542.65	12	1,527.50
1,750-1,499..	1	1,800.00	12	1,814.58
2,000-2,249..	....	....	5	2,030.00
2,250-2,499..	....	....	2	2,325.00
2,500-2,749..	1	2,600.00	1	2,500.00
3,000-3,249..	1	3,000.00	1	3,000.00
3,500-3,749..	....	....	1	3,500.00
4,000-4,249..	....	....	2	4,000.00
Total....	105	[1] 983.38	138	[1] 1,369.09
California.				
$800- $899..	1	800.00	1	800.00
1,000-1,249..	1	1,140.00	....	....
1,250-1,499..	10	1,319.00	3	1,373.33
1,500-1,749..	38	1,591.31	6	1,629.16
1,750-1,999..	45	1,815.33	18	1,836.11
2,000-2,249..	36	2,066.66	39	2,089.66
2,250-2,499..	36	2,360.55	41	2,400.73
2,500-2,749..	8	2,575.00	30	2,574.40
2,750-2,999..	5	2,786.00	22	2,789.54
3,000-3,249..	21	3,000.00	28	3,039.96
3,250-3,499..	7	3,314.28	22	3,297.72
3,500-3,749..	5	3,580.00	19	3,563.15
3,750-3,999..	....	....	3	3,860.00
4,000-4,249..	....	....	2	4,000.00
4,500-4,749..	....	....	1	4,500.00
Total....	213	[1] 2,137.51	235	[1] 2,620.09
Colorado.				
$600- $699..	1	$600.00	....	....
700- 799..	2	720.00	....	....
800- 899..	5	806.00	1	$880.00
900- 999..	11	911.36	2	945.00
1,000-1,249..	30	1,119.33	17	1,154.70
1,250-1,499..	16	1,363.12	19	1,375.00
1,500-1,749..	15	1,570.00	29	1,622.58
1,750-1,999..	4	1,792.50	16	1,833.75
2,000-2,249..	2	2,050.00	13	2,015.38
2,250-2,499..	1	2,400.00	3	2,410.00
2,500-2,749..	1	2,500.00	5	2,570.00
2,750-2,999..	....	....	1	2,800.00
3,000-3,249..	....	....	2	3,175.00
3,250-3,499..	1	3,300.00	1	3,300.00
3,500-3,749..	1	3,600.00	2	3,600.00
4,000-4,249..	....	....	1	4,000.00
Total....	90	[1] 1,312.77	112	[1] 1,739.73
Connecticut.				
$900- $999..	1	900.00	1	900.00
1,000-1,249..	5	1,120.00	1	1,000.00
1,250-1,490..	4	1,387.50	5	1,343.20
1,500-1,749..	11	1,613.63	7	1,578.57
1,750-1,999..	2	1,850.00	8	1,886.87
2,000-2,249..	6	2,083.33	9	2,072 22
2,250-2,499..	....	....	3	2,316.66
2,500-2,749..	3	2,500.00	7	2,598.57
2,750-2,999..	1	2,800.00	2	2,800.00
3,000-3,249..	3	3,000.00	2	3,100.00
3,250-3,499..	....	....	2	3,275.00
3,500-3,749..	1	3,500.00	1	3,600.00
3,750-3,999..	....	....	2	3,875.00
5,250-5,499..	....	....	1	5,250.00
Total....	37	[1] 1,859 45	51	[1] 2,222 37
Delaware.				
$600- $699..	4	622.20	....	....
700- 799..	3	723.33	....	....
800- 899..	1	810.00	....	....
900- 999..	2	930.00	....	....
1,000-1,249..	7	1,271.42	10	1,150.00
1,250-1,490..	....	....	1	1,400.00
1,500-1,749..	2	1,587.50	2	1,550.00
1,750-1,999..	....	....	4	1,850.00
2,000-2,249..	1	2,100.00	3	2,008.33
2,250-2,499..	....	....	1	2,250.00
2,500-2,749..	....	....	1	2,500.00
Total....	20	[1] 1,075.25	22	[1] 1,553.40
Dist. of Columbia.				
$2,500-$2,749.	7	2,500.00	6	2,740.00
3,000- 3,249.	....	....	1	3,000.00
Total....	7	[1] 2,500.00	7	[1] 2,777.14
Florida.				
$500- $599..	1	540.00	1	540.00
600- 699..	5	646.00	1	675.00
700- 799..	8	715.00	2	720.00
800- 899..	12	807.50	1	875.00
900- 999..	6	900.00	5	926.00
1,000-1,249..	17	1,095.58	30	1,137.66
1,250-1,499..	9	1,378.88	11	1,371.81
1,500-1,749..	10	1,546.25	15	1,600.66
1,750-1,999..	4	1,800.00	9	1,836.94
2,000-2,249..	3	2,033.33	10	2,067.50
2,250-2,499..	....	....	8	2,306.22
2,500-2,749..	1	2,700.00	....	....
2,750-2,999..	....	....	1	2,750.00
3,000-3,249..	....	....	5	3,000.00
Total....	76	[1] 1,145.75	99	[1] 1,563.61

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[1] Average.

TABLE 4.—*Number of high-school principals reported as receiving specified salaries, 1914–15 and 1919–20, and average salaries, by States*—Continued.

Range of salaries.	1914-15		1919-20	
	Principals.	Average salary.	Principals.	Average salary.
Missouri—Continued.				
600- 699..	58	$643.31	9	$660.55
700- 799..	57	729.82	19	740.52
800- 899..	41	808.04	49	817.34
900- 999..	44	905.45	54	915.55
1,000-1,249..	75	1,025.24	184	1,042.46
1,250-1,499..	12	1,325.00	44	1,344.71
1,500-1,749..	7	1,514.28	26	1,568.00
1,750-1,999..	4	1,781.28	15	1,813.33
2,000-2,249..	1	2,200.00	5	2,080.00
2,250-2,499..	1	2,250.00	3	2,350.00
2,500, 2,749..	2	2,500.00	2	2,500.00
3,000-3,249..	....	....	1	3,100.00
3,250-3,499..	4	3,300.00	2	3,300.00
3,500-3,749..	2	3,550.00	....	....
3,750-3,999..	....	....	1	3,750.00
4,000-4,249..	3	4,000.00	7	4,094.28
4,250-4,499..	1	4,300.00	3	4,300.00
4,750-4,999..	....	....	1	4,950.00
Total....	347	[1] 950.41	430	[1] 1,194.39
Montana.				
$600- $699..	1	675.00	....	....
700- 799..	1	720.00	....	....
800- 899..	5	819.00	....	....
900- 999..	11	900.00	1	900.00
1,000-1,249..	28	1,103.03	12	1,144.58
1,250-1,499..	13	1,346.15	16	1,346.03
1,500-1,749..	10	1,540.00	24	1,518.33
1,750-1,999..	7	1,800.00	18	1,764.16
2,000-2,249..	5	2,040.00	18	2,063.16
2,250, 2,499..	2	2,325.00	7	2,371.42
2,500, 2,749..	2	2,500.00	5	2,580.00
2,750-2,999..	3	2,800.00	2	2,750.00
3,000-3,249..	1	3,000.00	7	3,050.00
3,250-3,499..	....	....	2	3,310.00
3,500-3,749..	....	....	1	3,550.00
4,500-4,749..	....	....	1	4,500.00
Total....	89	[1] 1,382.30	114	[1] 1,855.35
Nebraska.				
$400- $499..	1	450.00	....	....
500- 599..	11	552.72	....	....
600- 699..	47	658.19	....	....
700- 799..	48	735.08	4	753.75
800- 899..	41	813.41	13	829.03
900- 999..	37	913.01	65	942.23
1,000-1,249..	46	1,081.19	138	1,112.45
1,250-1,499..	5	1,350.00	52	1,336.92
1,500-1,749..	6	1,550.00	28	1,477.32
1,750-1,999..	2	1,800.00	7	1,828.55
2,000-2,249..	....	....	13	2,069.23
2,250, 2,499..	....	....	2	2,325.00
2,500, 2,749..	1	2,500.00	....	....
2,750-2,999..	....	....	1	2,800.00
3,000-3,249..	1	3,000.00	....	....
3,500-3,749..	1	3,600.00	....	....
3,750-3,999..	....	....	1	3,770.00
4,000-4,249..	....	....	2	4,100.00
Total....	247	880.95	326	1,222.26
Nevada.				
$800- $899..	1	810.00	....	....
900- 999..	1	990.00	....	....
1,000-1,249..	....	....	2	1,192.50
1,250-1,499..	2	1,300.00	2	1,375.00
Nevada—Continued.				
$1,500-$1,749..	3	$1,600.00	1	$1,500.00
1,750-1,999..	1	1,800.00	2	1,775.00
2,000-2,249..	5	2,000.00	6	2,420.83
2,250-2,449..	1	2,250.00	3	2,400.00
2,500-2,749..	1	2,500.00	4	2,075.00
3,000-3,249..	....	....	1	3,000.00
3,500-3,749..	....	....	2	3,600.00
Total....	17	[1] 1,726.47	23	[1] 2,278.67
New Hampshire.				
$700- $799..	2	725.00	1	720.00
800- 899..	1	800.00	....	....
900- 999..	2	900.00	1	900.00
1,000-1,249..	13	1,115.38	11	1,127.27
1,250-1,499..	7	1,357.14	2	1,400.00
1,500-1,749..	4	1,575.00	16	1,575.00
1,750-1,999..	5	1,810.00	9	1,811.11
2,000-2,249..	4	2,025.00	8	2,125.00
2,250-2,499..	1	2,300.00	1	2,400.00
2,500-2,749..	1	2,500.00	2	2,650.00
2,750-2,999..	....	....	1	2,800.00
3,000-3,249..	....	....	1	3,000.00
3,500-3,749..	....	....	1	3,500.00
Total....	40	[1] 1,407.50	54	[1] 1,710.55
New Jersey.				
$700- $799..	1	750.00	....	....
800- 899..	5	820.00	....	....
900- 999..	6	908.33	....	....
1,000-1,249..	24	1,112.50	6	1,088.33
1,250-1,499..	7	1,385.71	16	1,294.06
1,500-1,749..	14	1,557.14	21	1,596.42
1,750-1,999..	4	1,812.50	12	1,850.00
2,000-2,249..	9	2,033.33	17	2,064.11
2,250-2,499..	6	2,358.33	4	2,325.00
2,500-2,749..	4	2,575.00	10	2,530.00
2,750-2,999..	1	2,800.00	6	2,842.33
3,000-3,249..	2	3,000.00	8	3,025.00
3,250-3,499..	2	3,375.00	2	3,425.00
3,500-3,749..	3	3,633.33	4	3,550.00
3,750-3,999..	2	3,775.00	2	3,850.00
4,000-4,249..	....	....	5	4,080.00
4,250-4,499..	1	4,300.00	1	4,400.00
4,500-4,749..	2	4,550.00	....	....
4,750-4,999..	....	....	3	4,800.00
6,000-6,249..	....	....	1	6,000.00
Total....	93	[1] 1,754.83	118	[1] 2,166.27
New Mexico.				
$600- $699..	1	675.00	....	....
700- 799..	1	775.00	....	....
800- 899..	1	800.00	....	....
900- 999..	5	900.00	2	900.00
1,000-1,249..	9	1,055.55	5	1,168.10
1,250-1,499..	3	1,400.00	5	1,370.00
1,500-1,749..	3	1,556.66	6	1,537.50
1,750-1,999..	....	....	3	1,800.00
2,000-2,249..	....	....	4	2,000.00
2,250-2,499..	2	2,400.00	1	2,400.00
2,500-2,749..	....	....	3	2,533.33
2,750-2,999..	....	....	1	2,800.00
Total....	25	[1] 1,232.00	30	[1] 1,627.18

[1] Average.

TABLE 4.—*Number of high-school principals reported as receiving specified salaries, 1914-15 and 1919-20, and average salaries, by States*—Continued.

Range of salaries.	1914-15		1919-20	
	Principals.	Average salary.	Principals.	Average salary.
New York.				
$600- $699..	14	$621.78	....	....
700- 799..	24	720.41	3	$761.33
800- 899..	46	812.28	6	829.16
900- 999..	38	903.28	11	922.72
1,000-1,249..	114	1,121.49	86	1,121.89
1,250-1,499..	71	1,355.98	103	1,344.06
1,500-1,749..	97	1,572.16	132	1,592.15
1,750-1,999..	27	1,829.62	68	1,850.55
2,000-2,249..	27	2,025.92	75	2,079.32
2,250-2,499..	5	2,350.00	26	2,323.84
2,500-2,749..	11	2,581.81	30	2,575.00
2,750-2,999..	3	2,800.00	9	2,826.66
3,000-3,249..	11	3,027.27	23	3,044.56
3,250-3,499..	1	3,300.00	6	3,325.00
3,500-3,749..	2	3,500.00	4	3,552.66
3,750-3,999..	....	....	3	3,850.00
4,000-4,249..	1	4,000.00	1	4,000.00
4,250-4,499..	....	....	1	4,400.00
5,000-5,249..	23	5,000.00	21	5,076.70
5,250-5,499..	....	....	2	5,250.00
Total....	515	[1] 1,533.32	610	[1] 1,881.37
North Carolina.				
$300- $399..	2	375.00	....	....
400- 499..	10	450.25	....	....
500- 599..	14	537.50	....	....
600- 699..	26	617.78	5	629.00
700- 799..	18	727.22	9	720.55
800- 899..	36	804.86	20	837.59
900- 999..	25	902.00	16	903.75
1,000-1,249..	48	1,061.66	128	1,056.68
1,250-1,499..	10	1,360.00	31	1,345.32
1,500-1,749..	3	1,500.00	40	1,541.12
1,750-1,999..	1	1,800.00	22	1,819.77
2,000-2,249..	....	....	7	2,028.57
2,250-2,499..	....	....	2	2,400.00
2,500-2,749..	....	....	1	2,500.00
3,750-3,999..	....	....	1	3,800.00
Total....	193	[1] 851.32	284	[1] 1,231.62
North Dakota.				
$600- $699..	4	663.75	....	....
700- 799..	20	733.00	....	....
800- 899..	22	813.63	....	....
900- 999..	34	909.41	11	961.81
1,000-1,249..	67	1,091.28	64	1,147.26
1,250-1,499..	14	1,249.28	66	1,352.34
1,500-1,749..	7	1,528.57	50	1,557.00
1,750-1,999..	1	1,900.00	17	1,833.52
2,000-2,249..	1	2,000.00	9	2,094.44
2,250-2,499..	....	....	3	2,400.00
2,500-2,749..	....	....	1	2,500.00
2,750-2,999..	....	....	1	2,800.00
Total....	170	[1] 1,016.12	222	[1] 1,412.74
Ohio.				
$400- $499..	3	440.00	....	....
500- 599..	16	548.43	....	....
600- 699..	72	641.77	2	620.00
700- 799..	69	729.13	28	733.07
800- 899..	69	813.31	45	818.57
900- 999..	60	900.75	69	887.97
1,000-1,249..	111	1,072.79	226	1,104.39
1,250-1,499..	30	1,331.63	97	1,339.01
1,500-1,749..	17	1,567.16	83	1,567.16
1,750-1,999..	4	1,825.00	36	1,832.65
2,000-2,249..	3	2,000.00	11	2,013.63
Ohio—Continued.				
$2,250-$2,499..	2	$2,325.00	10	$2,364.00
2,500-2,749..	9	2,522.22	1	2,500.00
2,750-2,999..	2	2,800.00	5	2,824.00
3,000-3,249..	9	3,000.00	5	3,070.00
3,250-3,499..	1	3,250.00	4	3,418.87
3,500-3,749..	3	3,500.00	10	3,560.00
3,750-3,999..	....	....	2	3,775.00
4,000-4,249..	....	....	3	4,066.66
Total....	480	[1] 1,007.72	637	[1] 1,325.83
Oklahoma.				
$500- $599..	3	555.00	....	....
600- 699..	13	645.76	....	....
700- 799..	23	733.73	....	....
800- 899..	31	811.29	6	818.33
900- 999..	62	925.64	24	933.75
1,000-1,249..	57	1,069.29	93	1,117.28
1,250-1,499..	9	1,361.66	69	1,341.15
1,500-1,749..	2	1,600.00	46	1,552.93
1,750-1,999..	4	1,800.00	16	1,793.75
2,000-2,249..	2	2,100.00	8	2,062.50
2,250-2,499..	....	....	6	2,400.00
2,500-2,749..	....	....	3	3,866.66
4,500-4,749..	....	....	1	4,500.00
Total....	206	[1] 958.02	272	[1] 1,363.68
Oregon.				
$600- $699..	2	637.50	....	....
700- 799..	11	733.63	....	....
800- 899..	18	814.16	2	805.00
900- 999..	17	910.58	7	948.57
1,000-1,249..	38	1,112 70	43	1,134.18
1,250-1,499..	13	1,323.84	36	1,331.66
1,500-1,749..	10	1,560.00	38	1,548.28
1,750-1,999..	1	1,800.00	21	1,815.23
2,000-2,249..	....	....	7	2,051.42
2,250-2,499..	....	....	2	2,407.50
2,500-2,749..	1	2,500.00	1	2,500.00
3,000-3,249..	2	3,000.00	....	....
3,250-3,749..	1	3,500.00	1	3,400.00
3,750-3,999..	....	....	2	3,900.00
Total....	115	[1] 1,131.90	161	[1] 1,417.32
Pennsylvania.				
$300- $399..	1	350.00	....	....
400- 499..	20	486.30	....	....
500- 599..	38	547.89	2	567.59
600- 699..	89	641.26	12	645.15
700- 799..	70	729.85	26	740.62
800- 899..	69	819.21	56	836.89
900- 999..	68	928.33	84	948.32
1,000-1,249..	128	1,121.91	182	1,132.96
1,250-1,499..	48	1,344.89	128	1,387.40
1,500-1,749..	54	1,527.29	89	1,636.32
1,750-1,999..	10	1,810.00	76	1,852.73
2,000-2,249..	17	2,023.52	53	2,085.19
2,500-2,749..	5	2,580.00	15	2,560.13
2,750-2,999..	....	....	12	2,779.16
3,000-3,249..	8	2,780.00	9	3,021.11
3,250-3,499..	1	3,330.00	10	3,375.50
3,500-3,749..	1	3,500.00	....	....
3,750-3,999..	....	....	3	3,923.33
4,250-4,499..	....	....	1	4,350.00
4,500-4,749..	1	4,500.00	1	4,510.00
5,000-5,249..	....	....	1	5,060.00
Total....	642	[1] 1,096.23	793	[1] 1,521.16

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[1] Average

TABLE 4.—*Number of high-school principals reported as receiving specified salaries, 1914-15 and 1919-20, and average salaries by States*—Continued.

Range of salaries.	1914-15		1919-20	
	Principals.	Average salary.	Principals.	Average salary.
Rhode Island.				
$800- $899..	1	$850.00	....	....
1,000-1,249..	1	1,200.00	1	$1,100.00
1,250-1,499..	1	1,400.00	....	....
1,500-1,749..	1	1,500.00	5	1,620.00
1,750-1,999..	3	1,375.00	1	1,800.00
2,000-2,249..	1	2,000.00	3	2,186.66
2,250-2,499..	....	....	2	2,375.00
2,500-2,749..	1	2,500.00	1	2,614.00
2,750-2,999..	1	2,800.00	1	2,885.00
3,000-3,249..	4	3,000.00	....	....
3,250-3,499..	....	....	3	3,606.66
3,500-3,749..	....	....	1	3,775.00
Total....	16	[1] 2,009.31	19	[1] 2,325.52
South Carolina.				
$300- $399..	2	365.00	....	....
400- 499..	1	400.00	1	480.00
500- 599..	1	585.00	2	550.00
600- 699..	10	657.50	2	640.00
700- 799..	4	710.00	4	740.00
800- 899..	10	808.00	4	828.50
900- 999..	15	936.00	13	932.69
1,000-1,249..	22	1,111.36	25	1,089.60
1,250-1,499..	4	1,312.50	13	1,356.15
1,500-1,749..	3	1,600.00	29	1,550.93
1,750-1,999..	....	....	12	1,833.12
2,000-2,249..	1	2,000.00	7	2,005.71
2,500-2,749..	....	....	1	2,700.00
Total....	73	[1] 949.31	101	[1] 1,297.04
South Dakota.				
$500- $599..	2	562.50	....	....
600- 699..	4	645.00	....	....
700- 799..	5	752.00	....	....
800- 899..	14	818.57	2	810.00
900- 999..	28	906.42	3	960.00
1,000-1,249..	44	1,100.00	34	1,133.60
1,250-1,499..	8	1,333.75	37	1,352.02
1,500-1,749..	5	1,551.00	39	1,564.10
1,750-1,999..	1	1,800.00	22	1,828.18
2,000-2,249..	2	2,000.00	7	2,085.71
2,250-2,499..	....	....	2	2,310.00
2,500-2,749..	....	....	2	2,500.00
Total....	113	[1] 1,054.69	148	[1] 1,479.30
Tennessee.				
$300- $399..	....	....	1	372.00
400- 499..	3	433.33	....	....
500- 599..	1	520.00	....	....
600- 699..	10	611.50	5	637.00
700- 799..	15	718.00	5	724.00
800- 899..	17	809.70	14	823.21
900- 999..	22	914.95	20	912.00
1,000-1,249..	39	1,091.92	46	1,101.13
1,250-1,499..	14	1,351.42	38	1,104.00
1,500-1,749..	9	1,553.33	21	1,590.62
1,750-1,999..	3	1,783.33	12	1,818.33
2,000-2,249..	2	2,000.00	9	2,038.88
2,250-2,499..	....	....	3	2,400.00
2,500-2,749..	....	....	1	2,500.00
Total....	131	[1] 1,026.74	176	[1] 1,274.90

Range of salaries.	1914-15		1919-20	
	Principals.	Average salary.	Principals.	Average salary.
Texas.				
$400- $499..	7	$472.50	....	....
500- 599..	17	537.35	11	$553.18
600- 699..	38	639.52	24	652.66
700- 799..	33	729.24	31	737.58
800- 899..	44	809.54	32	835.12
900- 999..	41	909.14	33	920.03
1,000-1,249..	85	1,102.61	120	1,104.48
1,250-1,499..	32	934.12	55	1,346.84
1,500-1,749..	20	1,514.00	50	1,565.10
1,750-1,999..	3	1,768.33	22	1,803.81
2,000-2,249..	2	2,100.00	18	2,024.44
2,250-2,499..	4	1,810.01	8	2,125.00
2,500-2,749..	3	2,500.00	11	2,580.90
2,750-2,999..	1	2,800.00	4	2,802.94
3,000-3,249..	....	....	1	3,000.00
3,250-3,499..	....	....	3	3,328.00
Total....	330	[1] 953.46	425	[1] 1,255.94
Utah.				
$1,000-$1,249.	1	1,200.00	....	....
1,250- 1,499.	5	1,380.00	2	875.00
1,500- 1,749.	7	1,528.88	10	1,636.25
1,750- 1,999.	4	1,812.50	7	1,829.28
2,000- 2,249.	....	....	3	2,049.00
2,250- 2,499.	1	2,300.00	2	2,385.00
2,500- 2,749.	2	2,600.00	1	2,500.00
2,750- 2,999.	....	....	1	2,800.00
3,750- 3,999.	1	3,800.00	....	....
4,000- 4,249.	....	....	1	4,000.00
Total....	21	[1] 1,778.57	28	[1] 1,529.80
Vermont.				
$800- $899.	2	800.00	....	....
900- 999.	2	1,800.00	....	....
1,000- 1,249.	13	1,096.15	6	1,150.00
1,250- 1,499.	6	1,391.66	7	1,375.00
1,500- 1,749.	10	1,600.00	12	1,537.50
1,750- 1,999.	1	1,800.00	7	1,828.57
2,000- 2,249.	3	2,100.00	10	2,050.00
2,250- 2,499.	....	....	2	2,375.00
2,500- 2,749.	1	2,500.00	7	2,525.00
Total....	38	[1] 13,752.63	48	[1] 1,731.77
Virginia.				
$400- $499...	5	467.00	....	....
500- 599...	10	541.50	2	585.50
600- 699...	27	627.59	13	640.19
700- 799...	26	726.34	4	715.00
800- 899...	24	809.78	28	877.44
900- 999...	36	885.27	35	924.57
1,000-1,249...	35	1,110.42	74	1,120.54
1,250-1,499...	14	1,329.28	50	1,319.52
1,500-1,749...	6	1,505.00	25	1,559.20
1,750-1,999...	4	1,675.00	11	1,800.00
2,000-2,249...	2	2,100.00	9	2,077.77
2,250-2,499...	....	....	5	2,310.00
2,500-2,749...	2	2,650.00	1	2,500.00
2,750-2,999...	....	....	2	2,775.00
3,000-3,249...	....	....	2	3,050.00
3,500-3,749...	....	....	1	3,600.00
Total....	191	[1] 929.79	250	[1] 1,291.83

[1] Average.

TABLE 4.—*Number of high-school principals reported as receiving specified salaries, 1914-15 and 1919-20, and average salaries by States*—Continued.

Range of salaries.	1914-15		1919-20	
	Principals.	Average salary.	Principals.	Average salary.
Washington.				
$700- $799..	3	$743.33	......	......
800- 899..	6	815.83	1	$855.00
900- 999..	37	917.97	8	928.75
1,000-1,249..	67	1,123.02	44	1,120.57
1,250-1,499..	34	1,346.17	54	1,349.51
1,500-1,749..	31	1,521.61	76	1,571.74
1,750-1,999..	3	1,800.00	40	1,718.00
2,000-2,249..	3	2,066.66	16	2,050.00
2,250-2,499..	2	2,400.00	1	2,350.00
2,500-2,749..	......	......	3	2,540.00
2,750-2,999..	2	2,875.00	1	2,800.00
3,000-3,249..	2	3,000.00	2	3,150.00
3,250-3,499..	3	3,333.33	1	3,300.00
3,500-3,749..	......	......	3	3,600.00
3,750-3,999..	......	......	3	3,783.33
4,000-4,249..	1	4,000.00	......	......
4,250-4,499..	......	......	1	4,400.00
Total....	194	[1] 1,295,99	254	[1] 1,588.21
West Virgina.				
$500- $599..	1	500.00	......	......
600- 699..	4	653.75	......	......
700- 799..	6	750.00	1	700.00
800- 899..	4	805.00	......	......
900- 999..	20	908.00	3	916.66
1,000-1,249..	27	1,097.77	15	1,158.33
1,250-1,499..	10	1,367.50	26	1,345.00
1,500-1,749..	9	1,522.22	30	1,571.66
1,750-1,999..	3	1,783.33	28	1,816.28
2,000-2,249..	3	2,033.33	16	2,070.31
2,250-2,499..	......	......	5	2,370.00
2,500-2,749..	......	......	1	2,520.00
2,750-2,999..	......	......	1	2,870.00
3,000-3,249..	......	......	2	3,100.00
Total....	87	[1] 1,121.03	128	[1] 1,643.48

Range of salaries.	1914-15		1919-20	
	Principals.	Average salary.	Principals.	Average salary.
Wisconsin.				
$700- $799..	2	$742.50	......	......
800- 899..	27	515.74	......	......
900- 999..	33	909.09	5	$936.00
1,000-1,249..	67	1,105.41	34	1,137.05
1,250-1,499..	46	1,336.52	48	1,324.60
1,500-1,749..	43	1,579.06	86	1,580.37
1,750-1,999..	12	1,825.00	48	1,830.13
2,000-2,249..	12	2,045.83	30	2,076.33
2,250-2,499..	3	2,400.00	14	2,410.71
2,500-2,749..	5	2,540.00	16	2,455.00
2,750-2,999..	1	2,750.00	7	2,757.14
3,000-3,249..	5	3,000.00	6	3,043.83
3,250-3,499..	......	......	4	3,370.00
3,500-3,749..	......	......	3	3,657.33
3,750-3,999..	......	......	1	3,800.00
Total....	256	[1] 1,301.01	302	[1] 1,770.87
Wyoming.				
$600- $699..	1	675.00	......	......
700- 799..	1	750.00	......	......
800- 899..	2	805.00	......	......
900- 999..	3	900.00	......	......
1,000-1,249..	9	1,058.88	9	1,127.77
1,250-1,499..	2	1,400.00	6	1,377.91
1,500-1,749..	2	1,660.00	10	1,562.50
1,750-1,999..	2	1,900.00	4	1,770.00
2,000-2,249..	......	......	5	2,080.00
2,500-2,749..	......	......	1	2,500.00
Total....	22	[1] 1,140.22	35	[1] 1,543.50

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[1] Average.

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BULLETIN, 1920, No. 45

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

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CONTENTS.—Proceedings of associations—Educational history—Current educational conditions—Educational theory and practice—Educational psychology; Child study—Educational tests and measurements—Special methods of instruction—Special subjects of curriculum—Kindergarten and primary school—Rural education—Secondary education—Normal training—Teachers' salaries and professional status—Higher education—Research—School administration—School management—Schoolhouses and grounds—School hygiene and sanitation—Physical training—Play and recreation—Social aspects of education—Child welfare—Religious education—Manual and vocational training—Vocational guidance—Agriculture—Home economics—Commercial education—Professional education—Civic education—Americanization—Education of soldiers—Education of women—Negro education—Education of deaf—Exceptional children—Education extension—Libraries and reading—Bureau of Education: Recent publications.

NOTES.

Some especially noteworthy books which have recently appeared are the following, the numbers in parentheses referring to the full entries in this record: Cubberley, History of education (1973); Coursault, Principles of education (1993); Dewey, Methods and results of testing school children (2006); Thwing, American colleges and universities in the Great War (2117); Keith and Bagley, The nation and the schools (2127); Kelly, Training industrial workers (2163).

The record comprises a general survey in bibliographic form of current educational literature, domestic and foreign, received during the monthly period preceding the date of publication of each issue.

This office can not supply the publications listed in this bulletin, other than those expressly designated as publications of the Bureau of Education. Books, pamphlets, and periodicals here mentioned may ordinarily be obtained from their respective publishers, either directly or through a dealer, or, in the case of an association publication, from the secretary of the issuing organization. Many of them are available for consultation in various public and institutional libraries.

Publications intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

PROCEEDINGS OF ASSOCIATIONS.

1971. **Illinois state teachers' association.** Journal of proceedings of the sixty-sixth annual meeting . . . held at Springfield, Ill., December 29-31, 1919. Carlinville, Ill. [1920] 216 p. 8°. (R. C. Moore, secretary, Carlinville, Ill.)

Contains: 1. C. S. Grove: President's address, p. 59–64. 2. J. S. Brown: The teaching of thrift—an educational necessity, p. 71–75. 3. G. T. Palmer: The school and the tuberculosis problem, p. 75–79. 4. The county superintendency in the new constitution; shall the office be made elective by the people, by a board or be appointive? [by] E. H. Lukenbill, p. 99–102; [by] G. O. Smith, p. 102–105. 5. The county superintendent and the community high school [by] R. L. Moore, p. 108–10; [by] Grant Balding, p. 110–13. 6. E. A. Turner: Value and feasibility of extending the service of state normal training schools to employed teachers, p. 115–19; Discussion, by E. W. Powers, p. 119–21. 7. J. L. Dunbar: Interesting the farmer in education, p. 125–30. 8. James McKinney: Industrial education in our schools, p. 130–33. 9. H. A. Bone: Mobilizing the special abilities of members of the community for the use of high school pupils, p. 135–46. 10. G. J. Koons: Testing and its relation to educational guidance, p. 146–49. 11. O. L. Manchester: Thrift and its connection with public high school education, p. 149–53. 12. U. J. Hoffman: Illinois superior one-teacher school, p. 154–56. 13. Grace Geddes: "Free occupations" in primary schools, p. 157–61. 14. Osbourne McConathy: Problems confronting the music department of American schools, p. 162–66. 15. C. F. Miller: The normal plan [of school gardens], p. 170–76. 16. F. H. Currens: A discussion of the Smith-Towner educational bill, p. 183–86. 17. L. H. Roble; Social life of high school girls, p. 201–203. 18. Mrs. H. L. Fleming: Things worth while in parent-teacher association work, p. 204–210.

EDUCATIONAL HISTORY.

1972. **Adamson, John William.** A guide to the history of education. London, Society for promoting Christian knowledge; New York, The Macmillan company, 1920. 47 p. 12°. (Helps for students of history, no. 24)

1973. **Cubberley, Ellwood P.** The history of education. Educational practice and progress considered as a phase of the development and spread of western civilization. Boston, New York [etc.] Houghton Mifflin company [1920] xxiv, 849 p. plates, illus., maps. 8°. (Riverside textbooks in education)

This work undertakes to present a history of the progress and practice and organization of education itself, and to give to such a history its proper setting as a phase of the history of the development and spread of our Western civilization. It is not a history of educational theories. The book is accompanied by a parallel volume of Readings, containing a large collection of source material illustrative of the historical narrative.

1974. **Haarhoff, Theodore.** Schools of Gaul; a study of pagan and Christian education in the last century of the Western empire. London, New York [etc.] Oxford university press, Humphrey Milford, 1920. xii, 272 p. 8°.

The author, who is a South African, finds an interesting parallel between the present language situation in South Africa and the similar situation in Gaul of the fourth century A. D.

1975. **Lambley, Kathleen.** The teaching and cultivation of the French language in England during Tudor and Stuart times; with an introductory chapter on the preceding period. Manchester, University press; London, New York, Longmans, Green & co., 1920. xiii, 438 p. 8°.

1976. **MacNeill, J. G. S.** The historical society, Trinity college, Dublin, 1770–1920. Contemporary review, 118: 664–70, November 1920.

Review of the activities and history of the historical society of Trinity college, Dublin.

1977. **O'Brien, George.** An essay on mediaeval economic teaching. London, New York [etc.] Longmans, Green, and co., 1920. 242 p. 8°.

1978. **Parry, A. W.** Education in England in the middle ages. London, W. B. Clive, University tutorial press, ltd., 1920. 264 p. 16°.

Thesis (D. Sc.)—University of London.

CURRENT EDUCATIONAL CONDITIONS.

UNITED STATES.

1979. Educational news bulletin, vol. 13, no. 3, November 1920. Madison, Wis. (Good school week.)

Contains an editorial by C. P. Cary and practical suggestions for "good school week" activities.

1980. **Friedman, Elisha M.,** *ed.* America and the new era; a symposium on social reconstruction. New York, E. P. Dutton & company [1920] xxx. 500 p. 8°.

Contains: 1. Foreword, by Herbert Hoover, p. xxiii–xxx. 2. The child and society, by Sophonisba P. Breckinridge, p. 311–22. 3. New demands in education, by Paul Klapper, p. 323–37. 4. Vocational guidance and vocational education, by J. P. Munroe, p. 339–52.

1981. **Graves, Louis.** Wanted: three billions a year for schools. World's work, 41: 167–70, December 1920.

An interview with Dr. Claxton on our educational crisis. The United States commissioner of education discusses the emergency in education. He says that the personnel, buildings, and equipment are far from equal to the demands upon them.

1982. **Harding, W. L.** [Address of the governor of Iowa to the members and prospective members of the Iowa legislature, September 29, 1920.] School life, 5: 3–4, October 15, 1920.

The governor of Iowa makes definite recommendations concerning education in Iowa and urges the members of the legislature to give their best thought and energies to the school problem.

1983. **Hartwell, Ernest C.** The city school of tomorrow. American education, 24: 108–12, November 1920.

Address delivered at the University convocation of the state of New York, October 8, 1920.

The writer says that the city schools of the future are just now far more in need of an honest, non-political, common sense recognition of their fundamental business necessities than they are of new educational philosophy.

1984. **Kennedy, Joseph.** The nature of democracy. [University, University of North Dakota] 1920. p. 43–55. 8°.

Reprinted from the Quarterly journal of the University of North Dakota, vol. 11, October 1920.

Exchange lecture delivered at the University of Manitoba, Winnipeg, March 19, 1920, and repeated at Convocation, University of North Dakota, April 1, 1920—slightly modified in view of each setting.

1985. **National civic federation. Augusta (Me.) branch.** The Augusta survey. A community study and population census of the city of Augusta, Maine. [1920] 155 p. 8°.

L. Eva Summers, survey director.

Pages 36 to 63 of this survey are devoted to education in Augusta.

1986. **Queen, Hallie E.** Some problems of the American teacher in our Spanish-speaking possessions. Journal of education, 92: 377–78, October 21, 1920.

1987. **Spaulding, Frank E.** The present educational crisis. Saratoga Springs, N. Y., Skidmore school of arts, 1920. 17 p. 8°.

An address delivered at the commencement exercises of Skidmore school of arts on June 10, 1920.

Says the educational crisis is alarming. It can be adequately met only by prolonged devotion of the best, the most statesmanlike intelligence that the country affords; only by the resolute determination of the most enlightened public sentiment; only by the adoption of the profession of teaching, making it in reality a profession, by hundreds of thousands of thoroughly educated, professionally trained, professionally minded men and women; only by the annual expenditure of unprecedented sums of money.

FOREIGN COUNTRIES.

1988. **Chapman, Charles E.** The Chilean educational system, with especial reference to the position of the university. Hispanic American historical review (Baltimore, Md.) 3:395–403, August 1920.

By a United States exchange professor to Chile. He says that while in a population of some 4,000,000 in Chile, about half—60 per cent according to some accounts—are illiterate, the educational advances of recent years have been marked, especially as regards women.

1989. **Cobb, *Sir* Cyril.** London's scheme of education. Contemporary review, 118:646–53, November 1920.

Application of the English Education act of 1918 to conditions in London. Prospective expenditures of the Board of education for buildings, salaries of teachers, etc.

1990. **Great Britain. Board of education.** Report of the Departmental committee on the organisation of secondary education in Wales. Presented to Parliament by command of His Majesty. London, H. M. Stationery office, 1920. 131 p. 8°.

1991. **Levesque, D.** La formation professionnelle dans les écoles primaires supérieures. Revue pédagogique, 77:235–69, October 1920.

1992. **Schoell, Frank L.** L'évolution récente des universités françaises. Modern language journal, 5:28–37, October 1920.

EDUCATIONAL THEORY AND PRACTICE.

1993. **Coursault, Jesse H.** The principles of education. Boston, New York [etc.] Silver, Burdett and company [1920] xii, 468 p. 12°. (Beverley educational series, ed. by W. W. Charters)

The purpose of this book is to make simple, definite, and clear, a body of principles which should guide in educational thought and practice. It takes up the results of experimental science in the investigation of educational practice, and correlates and interprets them in the light of modern philosophy.

1994. **Edwards, A. S.** The fundamental principles of learning and study. Baltimore, Warwick & York, inc., 1920. 239 p. 8°.

1995. **Grandgent, Charles H.** Old and new; sundry papers. Cambridge, Harvard university press, 1920. 177 p. 8°.

The papers in this collection have this in common, that they treat, in general, of changes in fashion, especially in matters of speech and of school.

1996. **Turner, Edwin Arthur.** The essentials of good teaching; with introduction by Lotus D. Coffman. Boston, New York [etc.] D. C. Heath & co. [1920] xiii, 271 p. 12°.

1997. **Watts, Frank.** Education for self-realisation and social service. London, University of London press, ltd., 1920. xii, 275 p. 12°. (The new humanist series. Honorary editor: Benchara Branford)

The thesis maintained in this book is that education is the process by which man learns to regulate his conduct so that it makes for the social as well as his own individual development and well-being.

EDUCATIONAL PSYCHOLOGY; CHILD STUDY.

1998. **Browne, George H.** Headline methods and the moving-picture mind. English leaflet, 20: 1–9, November 1920.

"The temper of the minds we are supposed to put-and-keep-an-edge on, as it is affected by the superficial, sloppy, and enervating habits of observing, thinking (!), and remembering induced by the wide-spread skimming of periodicals and by over-indulgence in the moving-picture show."

1999. **Martin, Lillien J.** Mental hygiene; two years' experience of a clinical psychologist. Baltimore, Warwick & York, inc., 1920. viii, 89 p. 12°.

2000. **Smith, Eugene R.** Interest and school work. Washington, D. C., Progressive education association, 1920. 7 p. 8°. (Bulletin no. 3, October 1920)

Some suggestions for arousing interest in school work.

2001. **Thaler, William H.** Modern ideals of child behavior, and their influence on American life. Education, 41: 141–51, November 1920.

Says it is a mistake to feel, as educators do today, that intelligence can be trained at the school, leaving the sentiments and desires to the parents.

EDUCATIONAL TESTS AND MEASUREMENTS.

2002. **Alexander, Jessie M.** Binet-Simon test in practical use in the public schools of Hinsdale, Illinois. Elementary school journal, 21: 146–48, October 1920.

Emphasizes the value of the test.

2003. **Anthony, Katherine M.** "Breaking into" tests and measurements. Virginia journal of education, 14: 90–93, November 1920.

Some suggestions for the beginner in giving standard tests.

2004. **Blair,** *Sir* **Robert.** The individual child and methods of teaching. Scientific monthly, 4: 459–63, November 1920.

The influence upon education of tests to ascertain the needs and capacities of the individual child. Discusses the various experimental tests in vogue, etc.

2005. **Chapman, J. Crosby** *and* **Eby, H. L.** A comparative study, by educational measurements, of one-room rural-school children and city-school children. Journal of educational research, 2: 636–46, October 1920.

An unselected group of 71 children from one-room one-teacher rural schools, ages distributed from 11 to 13 years, in northern Ohio, was compared with a similar group in an average large city (Cleveland) school by administering nine psychological and educational tests. In the tests of abilities which are relatively independent of school training there were but small differences in the attainments of the two groups, but in the remainder of the tests the rural children were notably inferior.

2006. **Dewey, Evelyn.** Methods and results of testing school children. Manual of tests used by the psychological survey in the public schools of New York city, including social and physical studies of the children tested; by Evelyn Dewey, Emily Child, Beardsley Ruml. New York, E. P. Dutton & company [1920] ix, 176 p. plates, tables, diagrs. 8°.

2007. **Dickson, Virgil E.** Mental testing for all kindergarten children. Kindergarten and first grade, 5: 353–56, November 1920.

Address given before the Kindergarten section of the National education association, Salt Lake City, Utah.

The writer believes that mental testing is an indispensable factor in the training of kindergarten and primary teachers and supervisors, for working out the readjustment problems in kindergarten and primary education.

2008. ——— The use of group tests in the guidance of eighth-grade and high-school pupils. Journal of educational research, 2: 601–10, October 1920.

An address delivered before the National association of directors of educational research at Cleveland, Ohio, February 26, 1920.

The writer finds the group mental tests of great aid in the segregation of pupils into groups according to their capacity to do school work.

2009. **Finley, George William.** A comparative study of three diagnostic arithmetic tests. Greeley, Colo., State teachers college, 1920. 40 p. 8°. (Colorado state teachers college bulletin, ser. 20, no. 4, July 1920)

Pt. I gives a discussion of the value of arithmetic tests in general and a description of the tests used, the Cleveland survey tests, the Woody scale, and the Monroe diagnostic tests.—Pt. II gives the results obtained by giving the three different tests to a group of children and the conclusion reached from these results.

2010. **Griffith, G. L.** Harlan's American history test in the New Trier township schools. School review, 28: 697–708, November 1920.

Test inaugurated in four schools of New Trier township, Cook county, Ill. The test measures historical ability; remembering of facts; and the ability to understand historical materials. But it does not measure, says the writer, "the most important objective of history study, namely, the 'aim of history study is to help solve present-day problems.'"

2011. **Jordan, A. M.** Measurement of some class-room products. Arkansas teacher, 8: 10–14, October 1920.

The director of the Bureau of tests and measurements of the University of Arkansas gives some suggestions for giving the tests and shows the value of the tests.

2012. **Lincoln, Edward A.** The effects of native intelligence upon scores in standard tests. School and society, 12: 441–44, November 6, 1920.

2013. **Myers, Garry C.** School intelligence surveys. Current education, 24: 596–600, October 1920.

A special lecture delivered before the summer school of Lehigh university, June 19, 1920.

Group intelligence tests for children in city schools.

2014. **Pintner, Rudolf,** *and* **Reamer, Jeannette.** A mental and educational survey of schools for the deaf. American annals of the deaf, 65: 451–72, November 1920.

Results of mental and educational tests given to about 2,500 deaf children in state institutions and in public day schools.

2015. **Williams, L. A.** Further use of standard tests and scales as a basis for a co-operative research plan. Chapel Hill, The University, 1920. 21 p. 8°. (University of North Carolina record. Extension series no. 37, May 1920)

SPECIAL METHODS OF INSTRUCTION.

PROJECT METHOD.

2016. **Byington, Edwin H.** Student-authorship in history. Journal of education, 92: 429–31, November 4, 1920.

The writer says that student-authorship is simply carrying the laboratory idea one step further in the study of history. The plan is not as difficult as it sounds and it does secure many of the advantages of the laboratory system. Gives the main features of such a plan.

2017. **Horn, Ernest.** What is a project? Elementary school journal, 21: 112–16, October 1920.

Study based on data obtained from 120 advanced students in a course given by the writer at the University of Chicago in 1919. The title of the course was: "The improvement of the study habits of grade- and high-school pupils."

2018. **Indiana.** State board of education. Supervised home project and club work. Issued under the direction of L. N. Hines, state superintendent of public instruction, Indianapolis, Indiana. [Fort Wayne, Ind., Fort Wayne printing company, 1920] 56 p. illus. 12°. (Educational bulletin no. 41. Vocational series no. 20)

2019. The project method for teaching high school composition. Bulletin of high points, 2: 24–31, October 1920.

2020. **Struble, Mildred C.** A big business—English project. English journal, 9: 463–66, October 1920.

Teaching business English in the high school at Ellensburg, Washington. Introduction of laboratory method. The class compiled statistics for a state vocational needs survey.

2021. **Trybom, J. H.** An application of the project method. Elementary manual training—fifth grade. Manual training magazine, 22: 129–33, November 1920.

VISUAL INSTRUCTION.

2022. **Abrams, Alfred W.** Visual instruction. p. 142–45. 8°.

Reprinted from 1920 edition of The Encyclopedia Americana.

2023. **Ellis, Don Carlos.** Educational uses of industrial film. Moving picture age, 3: 13–14, November 1920. illus.

2024. **Gause, Frank A.** An experiment in the use of the eyes. Western journal of education, 26: 6, October 1920.

An address delivered before the Visual education section of the National education association, Cleveland, Ohio, February 1920.

The use of stereoscopic views and lantern slides in the schools of Bay City, Michigan.

2025. **Nalder, Frank E.** Northwest vast field for film service. Educational film magazine, 4: 8–9, 20, November 1920. illus.

What the State college of Washington is doing toward filling the needs of the rural communities for moving pictures.

2026. The use of the cinema in the teaching of geography. Geographical teacher (London) 10: 280–82, Autumn 1920.

SPECIAL SUBJECTS OF CURRICULUM.

READING.

2027. **Gray, William S.** Training pupils to read and study effectively. Oklahoma school herald, 28: 1–3, October; 11–13, November 1920.

Describes methods of emphasizing silent reading habits in elementary school instruction.

2028. **Hawley, William H.** The effect of clear objectives on the teaching of reading. Journal of the New York state teachers' association, 7: 191–95, October 1920.

Reading in the upper grades, the need of more definite standards and the results of some reading tests given in the spring of 1919.

2029. **Zornow, Theodore A.** Reading in the first grade. Journal of the New York state teachers' association, 7: 201–208, October 1920.

Some suggestions for teaching reading in the first grade.

SPELLING.

2030. **Capps, A. G.** Curriculum content of a high-school spelling course. Journal of educational research, 2: 626–35, October 1920.

A study of words misspelled by high-school students, showing that approximately 44 per cent of the directed spelling curriculum should consist of commonest words such as are found in Ayres' list, and the remaining 56 per cent should consist of words special to the high-school curriculum.

ENGLISH AND COMPOSITION.

2031. **Bowlin, William R.** Business English—a revolution and an experiment. Illinois association of teachers of English bulletin, 13:1–9, October 1, 1920.

Some tendencies in the teaching of English. The writer says that business English is a study of accuracy and advisedness of expression.

2032. **Collamore, Edna A.** Language training, formative and corrective. Kindergarten and first grade, 5:359–62, November 1920.

Some suggestions for making language training in the first grade more constructive, more effective, and more efficient.

2033. **Hervey, Walter L.** "Of paramount importance." Bulletin of high points, 2:9–13, October 1920.

Language instruction and the shortcomings of high-school and college graduates. Emphasizes the study of words, the study of grammar in a proper way and from a proper point of view, and the study of how to get the point of what is read.

2034. **Kavana, Rose M.** The elements of English composition. Boston, Richard G. Badger [1920] 391 p. 8°.

This work takes the form of an enlarged study program, and deals with the elements of oral and written composition in a way suitable for adoption in the classroom.

2035. **McKee, Mabel F.** Three examples of motivation. English journal, 9:457–62, October 1920.

Discusses the motivation of English literature and composition in the high school.

2036. **Rodkey, Edith.** Oral English as a means of socialization. English journal, 9:440–47, October 1920.

Plan pursued in Stuyvesant high school, New York city. The first 10 minutes of each English class period is set aside for the oral work of one pupil and the criticism of this work.

2037. **Tracy, Gerald C.** The teaching of journalism. America, 24:34–35, October 30, 1920.

Believes that a graduate school in journalism is unnecessary, but a course in journalism has much to offer both to the man who wishes to enter the newspaper field and to the man who is bent on business or the profession of law or medicine.

DRAMATICS.

2038. **Bureau of educational dramatics, New York City.** Pilgrim plays and pageants, for use in communities, colleges and high schools. School-arts magazine, 20:146–51, November 1920.

2039. **Lewis, B. Roland.** The one-act play in colleges and high schools, with bibliographies and a list of one-act plays for study and production. Salt Lake City, University of Utah, 1920. 25 p. 8°. (Bulletin of the University of Utah, vol. 10, no. 16, February 1920)

2040. **Skinner, Margaret M.** Socializing dramatics. English journal, 9:448–56, October 1920.

Says that play production is a problem of the English teacher, for "it is one of the many extra-curricular activities which seem to fall naturally to him." Gives some developments of the club plan of dramatics in the Wisconsin high school of the University of Wisconsin.

ANCIENT CLASSICS.

2041. **Dean, Mildred.** The high school Latin course. Classical weekly, 14:37–39, November 8, 1920.

Advocates an agreement of the colleges and secondary schools upon a definite course of study for high schools with the elimination of much of the grammar that is now demanded and the addition of the elements now so sadly lacking.

MODERN LANGUAGES.

2042. **Fife, Robert H, *jr*.** On the teaching of German. Modern language journal, 5: 18–27, October 1920.

A paper read before the eleventh annual session of the New York state modern language association, Albany, November 25, 1919.

The present situation in regard to the teaching of German.

2043. **Hazard, Paul.** L'expansion du français dans le monde. Revue des deux mondes, 59: 307–27, September 15, 1920.

Third article of a series on the French language and the war. Takes up temporary losses and assured gains in the use of French, the place of French in human culture, the organization of the teaching of French, and the vitality of the French language and of France. Gives particular attention to the study of French in the United States.

An abstract of this article is given in the American review of reviews, 62: 539–40, November 1920, under title of "The place of the French language in human culture."

2044. **Saure, E. B. de.** Aims and methods of modern language teaching. Pennsylvania school journal, 69: 68–71, August 1920.

2045. **Thomas, Calvin.** Good and bad reasons for studying modern languages in school. Modern language journal, 5: 1–11, October 1920.

This is one of the last papers prepared by the author before his death. He was to have read it before a meeting of the New York state modern language association.

MATHEMATICS.

2046. **Davis, Margaret E.** The teaching of mathematics in the junior high schools. Mathematics teacher, 13: 13–24, September 1920.

Discusses the methods and subject-matter of the mathematics course as a whole.

2047. **Dresden, Arnold.** Why study mathematics? School and society, 12: 390–95, October 30, 1920.

2048. **Souder, Wilmer.** The metric system: its relation to mathematics and industry. Mathematics teacher, 13: 25–35, September 1920.

Discusses the teaching of the metric system in schools; its value in the scientific and practical world.

SCIENCE.

2049. **Great Britain. Board of education.** Some experiments in the teaching of science and handwork in certain elementary schools in London. London, H. M. Stationery office, 1920. 54 p. 8°. (Educational pamphlets, no. 36. Elementary school series no. 11)

2050. **Hunter, C. W.** The sequence of science in the junior and senior high school. High school journal, 3: 163–65, October 1920.

Gives a brief history of science teaching, showing how science is used in our everyday life and then giving the sequence of subject matter.

GEOGRAPHY.

2051. **Chamberlain, James F.** Geography in the secondary schools. Journal of geography, 19: 272–74, October 1920.

2052. **Nichols, Andrew.** Commercial geography as vocational guidance. School science and mathematics, 20: 706–14, November 1920.

Says that the great majority of pupils in great industrial centers are being prepared for business and not for the university. The business man obtains his information from technical and trade journals, not from college textbooks. If commercial geography teachers overlook this fact, they are neglecting the very best material for vocational guidance.

2053. **Thomas, Helen G.** How shall we teach geography? Journal of geography, 19: 250–54, October 1920.

Says that the latest development has been *human* geography, in which people supersede things in order of importance, the inanimate features of the earth being treated in the light of their relation to the animate. Emphasizes the advantages of regional geography.

2054. **Whitbeck, R. H.** The rejuvenation of geography. School and society, 12: 415–20, November 6, 1920.

Abridged from an address before the Missouri state teachers' association, November 1919.

The teaching of geography in the elementary and high schools and in the universities and the effect of the war on geography teaching.

SOCIAL SUBJECTS.

2055. **Carrier, F. W.** A topical method in United States history as a social study. Historical outlook, 11: 313–16, November 1920.

2056. **Teaching, vol. 5, no. 4, October 1920. (History and civics)**

Contains: 1. W. W. McConnell: Dynamic civics and leadership in the Neodesha high school, p. 3–8. 2. Pelagine Williams: The history teacher's opportunity, p. 8–9. 3. F. K. Hinchman: The laboratory method in high-school history, p. 10–13. 4. Josephine Weatherly: The correlation of history and literature, p. 12–16. 5. H. W. Ross: Civics a living subject, p. 16–18. 6. Gertrude Brown: History in the intermediate grades, p. 18–22. 7. Histories of the Great war, p. 25–26.

MUSIC.

2057. **Frampton, John R.** The college extension departments and the study of music. Education, 41: 192–98, November 1920.

Study based on replies to a questionnaire sent to various colleges by the extension department of the Iowa state teachers' college. Among other phases of the subject discusses "community sings."

SAFETY.

2058. **Detroit, Mich. Board of education.** A course of study in safety education. Detroit, Board of education, 1920. 31 p. 8°.

Prepared by Harriet E. Beard, supervising instructor safety education, Detroit teachers' college.

2059. **Stineman, Norman M.** Safety to public school children in well-planned fire-proof buildings. American city, 23: 468–70, November 1920.

THRIFT.

2060. **National education association. National council of education. Committee on thrift education.** Thrift education with actual results. 1920. 24 p. 8°.

The proceedings of the conference of the Committee on thrift education of the National education association, held at Salt Lake City, Utah, July 1920. Edited by Arthur H. Chamberlain, Flood Building, San Francisco, California.

2061. **Risley, J. H.** Teaching thrift in the public schools. Southern school journal, 21: 18–23, November 1920.

KINDERGARTEN AND PRIMARY SCHOOL.

2062. **Cunningham, Bess V.** The beginnings of educational work in the standardized elementary school. Its aim, scope, and method. Kindergarten and first grade, 5: 363–66, November 1920.

Address given before the Kindergarten section of the National education association, Salt Lake City, Utah.

2063. Today's housewife, Cooperstown, New York. [Pamphlets of interest to mothers] 5 pamphlets. 8°.

1. Today's housewife school of motherhood, by Emma G. Wallace, 11 p.—2. Educative play for the little child. What can be done with scissors and paste, by Sara L. Littell, 7 p.—3. Educative play for the little child. Numbers and letters learned through play, by Sara L. Littell, 7 p.—4. How to tell stories and why, by Florence P. Lippitt, 27 p.—5. What stories to tell and when, by Florence P. Lippitt, 20 p.

RURAL EDUCATION.

2064. **Collings, Pryor McBee.** How to improve rural school supervision. Missouri school journal, 37: 421–24, November 1920.

Some suggestions for helping rural teachers through (1) Personal conferences; (2) Observation of work in other schools; and (3) Monthly group conference at the centers.

2065. **Davis, Jackson.** Building a rural civilization. Some educational results among southern negroes. Southern workman, 49: 501–508, 549–62, November, December 1920. illus.

I. County training schools in the South.—II. Supervising industrial teachers.

2066. **Knight, Edgar W.** The State university and rural schools. High school journal, 3: 177, 182–83, October 1920.

Substance of an address at Berea College, Kentucky, May 10, 1920, on "How can the State universities promote rural school progress?"

2067. **Preston, Josephine Corliss.** Standardization of schools in the state of Washington. American school, 6: 170–71, 190, June 1920.

A standard rating card for the rural schools of Washington and directions for rating.

2068. **Rapeer, Louis W.** Health and the rural school. Modern medicine, 2: 703–6, October 1920.

Says that schools are a factor in the welfare and development of the community, physically and mentally.

2069. **Southwest Missouri state teachers college, Springfield, Mo.** Bulletin, vol. 15, no. 5, October 1920. illus.

Contains: 1. W. Y. Foster: A proposed solution for the problem of county supervision in Missouri, p. 4–27. 2. F. F. Thompson: Demonstration rural schools, p. 29–50.

SECONDARY EDUCATION.

2070. **Dietrich, Marion C.** Attendance in high schools. Inter-mountain educator, 16: 51–54, October 1920.

Deals with the attendance of the pupil after he has enrolled—how to keep him coming regularly and punctually.

2071. **Fowler, Burton P.** The social organization of a high school. School and society, 12: 396–99, October 30, 1920.

Points out some possibilities of capitalizing the social instincts of adolescent pupils through an effective organization of the so-called "Outside activities."

2072. **Hudelson, Earl.** Democracy and the junior high school. School and society, 12: 461–66, November 13, 1920.

2073. **Jackman, E. D.** The Dalton plan. School review, 28: 688–96, November 1920.

The Dalton plan, which was originated by Miss Helen Parkhurst, of the Child education foundation of New York city, and put into operation in the high school, comprises the following: (1) Monthly assignment; (2) freedom of study; (3) freedom of progress; (4) individual instruction; and (5) group creativeness. It was inaugurated in the high school of Dalton, Mass., with considerable effect.

2074. **Kephart, A. P.** A measure of high school efficiency. High school journal, 3: 195–99, November 1920.

A study made to ascertain the quality of the class room performance of college freshmen and to discover from what sources the college is getting students who do superior or inferior work during the freshman year.

2075. **Kittredge, H. C.** The undiscovered country. Atlantic monthly, 126: 646–53, November 1920.

The writer of this article is a master in St. Paul's school, Concord, N. H. He narrates in story form a day's experiences of a master in a boys' boarding school, during which he passes through all the attitudes, right and wrong, that people hold toward school-teaching, and at the end discovers that there is far more to be learned than he has yet mastered.

2076. **Koos, Leonard V.** The peculiar functions of the junior high school: their relative importance. School review, 28: 673–81, November 1920.

Writer characterizes the peculiar functions as follows: "1. Realizing a democratic school system through (*a*) retention of pupils, (*b*) economy of time, (*c*) recognition of individual differences, (*d*) exploration for guidance, (*e*) vocational education. 2. Recognizing the nature of the child. 3. Providing the conditions for better teaching. 4. Securing superior scholarship. 5. Improving the disciplinary situation and socializing opportunities."

2077. **Ohio. Department of public instruction.** The junior high school, manual of requirements and suggestions. Prepared by W. L. Spencer and Geo. M. Morris. Ed. and rev. by Walton B. Bliss, assistant superintendent of public instruction. Issued under the direction of Vernon M. Riegel, superintendent of public instruction. Columbus, O., The F. J. Heer printing co., 1920. 39 p. 8°.

2078. **Pearson, T. M.** Declared purposes of typical high schools. Arkansas teacher, 8: 8–12, September 1920.

Reveals some of the purposes of typical American high schools as they are disclosed in the school reports, catalogues, and courses of study of some twenty high schools.

2079. **Pettit, Walter W.** Self-supporting students in certain New York city high schools. New York, New York school of social work, 1920. 37 p. 8°.

A study of the self-supporting students in the high schools of New York city, showing what the high schools are doing to help the working student, and the ways in which schools can be of greater assistance to the student who must support himself.

2080. **Richardson, B. C.** Faculty organization in the Theodore Roosevelt high school (Alton, Illinois). School review, 28: 682–87, November 1920.

The purpose of the organization is to delegate to responsible heads or head assistants some of the details that occupy so much of the principal's time, and to leave him free for more extensive supervision, etc.

2081. **Sleman, Emily F.** College preparation in the combination high school. School and society, 12: 420–34, November 6, 1920.

Educational guidance in the choice of electives especially in connection with students intending to go to college.

2082. **Stouffer, Karl J.** Sundays in a boarding school. Religious education, 15: 276–81, October 1920.

A study of 34 private boarding schools in order to ascertain the practice in regard to amusements, church services, etc., on Sunday.

NORMAL TRAINING.

2083. **Colorado state teachers college, Greeley, Colo.** Sections one and two of the educational survey of Colorado state teachers college. Greeley, Colo., State teachers college, 1920. 148 p. 8°. (Colorado state teachers college bulletin, ser. 30, no. 5, August 1920)

Sec. 1. Administrative control. Sec. 2. Educational organization.

2084. **Foster, Frederick M.** The training of college teachers. School and society, 12: 475–78, November 20, 1920.

The writer says that the average college and university professor is a poor teacher for he has never been trained in the technique of teaching. Makes suggestions for the training of college teachers in the methods of teaching before they start on their career.

2085. **Indiana state normal school, Terre Haute, Ind.** The semi-centennial celebration of the Indiana state normal school, January 6–9, 1920, in commemoration of the completion of fifty years of work. Terre Haute, Ind., State normal school, 1920. 83 p. plates. 8°. (Indiana state normal school bulletin, vol 13, no. 4, June 1920)

2086. **Indiana. State teachers' training board.** Teacher training in Indiana. Manual with courses of instruction. Indiana, State teachers' training board, 1920. 48 p. 8°. (Educational bulletin no. 43, Teacher training series, no. 2)

Suggested list of books for the professional study of education, p. 43–48.

2087. **James, Benjamin B.** Experimental education in normal schools. School and society, 12: 385–90, October 30, 1920.

Read at the meeting of the Association of Wisconsin normal teachers, Madison, Wis., January 24, 1920.

2088. **Pearse, C. G.** The function of Wisconsin normal schools. Wisconsin journal of education, 52: 284–87, November 1920.

2089. **Thabault, Roger.** La culture intellectuelle des instituteurs. Revue pédagogique, 77: 185–98, 270–82, September, October 1920.

Writer is a professor in a French normal school. He presents first the means by which normal instructors may impart to their pupils a taste for things intellectual; secondly how a teacher living in the country may from his own resources maintain and enrich his intellectual life.

2090. **Wilson, Lester M.** Training departments in the state normal schools in the United States. Charleston, Ill., Eastern Illinois state normal school [1920] 115 p. 8°. (Normal school bulletin, no. 66, October 1, 1919)

"The purposes of the present study are to find: (1) What the training facilities of state normal schools are and how the training departments are organized; (2) the amount and nature of the students' contact with the training departments; (3) the relation of the teachers in other departments of the normal school to the work of the training department and the participation by the training school staff in the work of other departments; (4) what purposes the training departments propose to accomplish and how the training departments are organized and operated to accomplish these ends."

2091. **Winship, A. E.** What has strangled the normal schools? Journal of education, 92: 455–56, November 11, 1920.

The writer says that while the colleges and universities are overcrowded, the normal schools are gasping for breath. The only relief is to make all normal schools real colleges, with the privilege of giving real degrees which shall have full credit in any public school market.

TEACHERS' SALARIES AND PROFESSIONAL STATUS.

2092. **Almack, John C.** The selection of teachers. American school board journal, 61 : 29–31, November 1920.

"The purpose of this study is (1) to discover the nature of the information school officers now gather about prospective teachers, (2) to indicate what can be objectively measured, what is mere opinion, and what is irrelevant, (3) to suggest forms that will embody inferences gained from the consideration mentioned, and (4) to raise the question of the extent to which schools prepare teachers along the lines appointing officers believe fundamental."

2093. Are teachers human beings? American school board journal, 61 : 44–45, 100, 104, November 1920.

A Los Angeles high-school teacher shows how teachers can be more human.

2094. **Institute for public service, New York.** Why I like teaching. Journal of education, 92 : 408–409, October 28, 1920.

Prize essays by John Dixon, Elizabeth Pardee, and B. Witkowsky.

Also in American schoolmaster, 8 : 302–305, October 1920, and in various other periodicals.

2095. **Kempner, Aubrey J.** How professors live. School and society, 12: 436–41, November 6, 1920.

Conditions prevailing among the faculty of the University of Illinois.

2096. **Kendall, Calvin N.** The crumbling second line of defense. Outlook, 126: 548–50, November 24, 1920.

Discusses the question of teacher shortage, and suggests the following remedies: (1) By readjusting teachers' salaries; (2) by keeping the schools free of politics; (3) by assisting teachers to find comfortable and attractive homes; (4) by making school conditions as attractive and convenient as practicable; (5) by consolidating schools; (6) by enforcing compulsory education laws; (7) by having more democracy in the schools; (8) by giving a teacher a reasonable number of children to teach; (9) by raising the prestige of the teacher; (10) by establishing an adequate pension system.

2097. **MacLean, R. B.** Study of the supply and demand. National school digest, 40 : 153–56, November 1920.

The elementary teachers in the graded and high schools of Minnesota, their training and tenure.

2098. **Strayer, George D.** Actual school conditions in 359 American cities. American city, 23 : 464–67, November 1920.

Results of nation-wide inquiry on teachers' salaries and training. Illustrated with graphs.

2099. **Werner, William L.** The ethics of academic freedom. American teacher, 9 : 151–56, October 1920.

Bibliography: p. 156.

Thesis presented in education at summer session of Columbia university, July 1920.

A selective summary, chiefly of numerous articles and reports, that have discussed various phases of academic freedom in America.

2100. **Williams, Henry Horace.** The spiritual life and the teacher. High school journal, 3 : 199–202, November 1920.

An address delivered before the University of North Carolina summer school, June 29, 1920.

HIGHER EDUCATION.

2101. **Association of American colleges.** Bulletin, vol. 6, no. 3, October 1920.

Contains: 1. Vocational distribution of college graduates, p. 12–23. 2. College student migration—1918–1919, p. 24–47.

2102. **Abbott, William L.** The functions of the governing board in the administration of the university. School and society, 12: 445–49, November 13, 1920.

Address delivered on the occasion of the installation of Dr. Marion LeRoy Burton, as president of the University of Michigan, October 14, 1920.

2103. **Angier, Roswell P.** The college of the future. Yale alumni weekly, 30: 104–107, October 22, 1920.

An address given at the annual convocation of the University of the State of New York, Albany, on October 7 and 8, 1920.

2104. **Barnes, Julius H.** Colossal growth of colleges and universities. Journal of education, 92: 405–406, October 28, 1920.

Results of a study made by the Institute for public service, New York, showing the number of students in 1914 and in 1920.

2105. **Bartlett, Murray.** The University and the city. University of Buffalo studies, 1: 211–16, October 1920.

Address to the graduates at the seventy-fourth commencement, June 11, 1920. The development of the city university of Buffalo.

2106. **Burton, Marion LeRoy.** The function of the state university. American schoolmaster, 8: 285–302, October 1920.

Inaugural address delivered at the inauguration of President Burton at Ann Arbor, October 14, 1920.

Also in School and society, 12: 255–69, October 23, 1920, and Michigan alumnus, 27: 17–32, October 1920.

2107. ———. What must the colleges do? Engineering education, 11: 39–53, October 1920.

The college of liberal arts and the demands made upon it by the needs of the times.

2108. **College entrance examination board.** Twentieth annual report of the secretary, 1920. New York, Pub. by the Board, 1920. 138 p. 8°.

2109. **Hull, Callie.** Doctorates conferred in the sciences by American universities in 1920. Science, n. s. 52: 478–83, 514–17, November 19, 26, 1920.

Statistical compilation. Chemistry continues to head the list of subjects in which the doctorates were conferred.

2110. **James, Edmund Janes.** Sixteen years at the University of Illinois; a statistical study of the administration of President Edmund J. James. [Urbana] Pub. by the University of Illinois press, 1920. 263 p. col. front. (port.) illus. (incl. map) plates, plans. 8°.

2111. **Krauss, Paul H.** The state university, a challenge to the church. Chicago, Ill., Pub. by the Board of education of the United Lutheran church in America, 1920. 15 p. 8°.

2112. **Leighton, Joseph A.** The functions of the faculty in the administration of a university. School and society, 12: 449–58, November 13, 1920.

Address delivered at the inaugural session of the Educational conference held on the occasion of the inauguration of President Marion LeRoy Burton of the University of Michigan, October 14, 1920.

Advocates more recognized participation of the faculty in the administration of the university.

2113. **Lowell, Abbott L.** The art of examination. Harvard alumni bulletin, 23: 136–38, November 11, 1920.

Address delivered at the inauguration of President Burton of the University of Michigan. President Lowell says we need an improvement in our examination system which will measure the grasp of a whole subject rather than a certain amount of miscellaneous knowledge.

2114. **Park, Julian.** The city and the university. [Buffalo, University of Buffalo, 1920] [12] p. 12°. (University of Buffalo studies)

The municipality of Buffalo and its university.

2115. **Rhees, Rush.** Privilege and obligation. University of Buffalo studies, 1:218–26, October 1920.

The University of Buffalo and how it can furnish the youths of the city the privileges which will place them under obligations to be worthy citizens.

2116. **Scott, Austin W.** Education and the dead hand. Harvard law review, 34:1–19, November 1920.

Discusses the law regarding educational and other charitable endowments. Presents the case of Dartmouth College.

2117. **Thwing, Charles Franklin.** The American colleges and universities in the Great War, 1914–1919; a history. New York, The Macmillan company, 1920. 276 p. 8°.

This history helps to prove that the higher education, in the person of its teachers and students of successive generations, trains men for the service of the nation.

2118. **Webster, Arthur G.** Education and learning in America. Scientific monthly, 11:419–28, November 1920.

Criticises the efficiency of the work in our colleges and universities. Contrasts our methods with those in European institutions. Says that the criticisms made by President Eliot on West Point are eminently sound.

2119. **Wiltbye, John.** The college man in government. America, 24: 117–18, November 20, 1920.

The percentage of college men among the presidents of the United States, senators, governors, judges, etc.

RESEARCH.

2120. **Merriam, John C.** The research spirit in everyday life of the average man. Science, n. s. 52:473–78, November 19, 1920.

Influence of education on the research spirit. Says that education with "its varying emphasis on the fundamental truths of science, philosophy, human relations and religion is our principal safeguard."

2121. **Pollard, A. F.** A school of historical research. Contemporary review, 118:507–13, October 1920.

Discusses the establishment of a school of historical research in London, thanks to the munificence of an anonymous donor.

SCHOOL ADMINISTRATION.

2122. **Bonner, H. R.** A graphic method for presenting comparative cost analysis. p. 277–88. 8°.

Reprinted from Quarterly publications of the American statistical association, September 1920.

2123. **Bunce, Edgar F.** The superintendent's relation to the board of education and his part in their meetings. American school board journal, 61:55–56, November 1920.

Gives six fundamental principles which should govern a superintendent in his relations with his Board of Education: (1) Know your board, (2) Get the board to respect you, (3) Respect a member's point of view, (4) Be a leader of your board and not a follower of the ideas of one or two members, (5) Use common sense and stick-toitiveness, and (6) Be tactful.

2124. **Capen, Samuel P.** Arguments against the Smith-Towner bill. Educational review, 60:285–95, November 1920.

Presents arguments against the bill under three captions: (1) Failure to coordinate Government's educational activities; (2) Federal appropriations and their administration; (3) Inconsistencies. Under the latter head he says that the bill does not specify the inclusion of the Federal board for vocational education in the new department. Instead of the provisions of the Smith-Towner bill, Dr. Capen would advocate the creation of a "department of education and science."

2125. **Hammond, Josephine.** The challenge to the American school. North American review, 212: 658–67, November 1920.

A plea for Federal supervision and support of public education.

2126. **Holley, Charles E.** A national system of elementary education. Educational review, 60: 315–29, November 1920.

Advocates a system of education partially subsidized and advised from the national capital, and pronounces in favor of the Smith-Towner bill.

2127. **Keith, John A. H.,** *and* **Bagley, William C.** The nation and the schools; a study in the application of the principle of federal aid to education in the United States. New York, The Macmillan company, 1920. xvii, 364 p. 12°.

Presents facts and arguments designed to show that the federal government should aid in the support of public schools throughout the country, and that to administer this aid a national department of education should be established at Washington.

2128. **Magill, Hugh S.** The Smith-Towner bill. Educational review, 60: 296–307, November 1920.

Argues in favor of bill. Says that education can not be disregarded by the national government.

2129. **Mann, Charles R.** The national organization of education. Educational review, 60: 308–14, November 1920.

Doubts the expediency of the Smith-Towner bill. Says that the temptation of a central office of education is to neglect "the eternal search for sound principles, and to settle down to a routine administration of an established system."

2130. **Smith, H. P.** The accounting system and budget of a small city. American school board journal, 61: 41–43, 100, November 1920.

2131. **Strayer, George D.** Why the Smith-Towner bill should become a law. Educational review, 60: 271–84, November 1920.

A plea for the passage of the bill. Emphasizes the necessity for a national program for the removal of illiteracy and for the Americanization of the foreign born. Argues against the substitution of a national board of education for a department of education, as has been suggested.

2132. **Swift, Fletcher Harper.** Common school finance in Colorado and certain inferences of national import. Journal of educational research, 2: 647–67, October 1920.

To be concluded in the November issue.

SCHOOL MANAGEMENT.

2133. **Anthony, Katherine M.** Adapting school procedure to individual differences in children. Virginia journal of education, 14: 43–45, October 1920.

2134. **Armentrout, W. D.** Home study below the tenth grade. Techne, 3: 7–10, October 1920.

The writer thinks that the major portion of study should be done during the period of supervised study at school. Home study is better adapted to some subjects than to others. Gives some advantages and disadvantages of home study in history.

2135. **Craddock, Ernest A.** The class-room republic. London, A. & C. Black, ltd., 1920. 80 p. 12°.

Some experiments in student self-government in a day secondary school in England; the advantages of the system and some objections.

2136. **New York (City). Department of education. Bureau of attendance.** Report. . . for the period between July 31, 1915 to July 31, 1918. New York city, Department of education [1920?] 294 p. tables. 8°.

2137. **Perkins, Glen O.** The question of grades. Idaho teacher, 2: 129-32, November 1920.

A system of grading based upon a distribution according to the normal frequency curve. Claims the following advantages for the system, first, scientific distribution, second, absence of a failure grade, and, third, uniformity of grades.

SCHOOLHOUSES AND GROUNDS.

2138. **Cooper, Frank Irving.** Determining the number of rooms for a departmental school building. American school board journal, 61: 34-37, 100, November 1920. illus.

A paper read before the Department of school administration of the National education association at its annual meeting July 7, 1920, in Salt Lake City.

2139. **Thornton, H. Newton.** Modern school buildings in Idaho. American school board journal, 61: 46-51, 96, November 1920. illus.

SCHOOL HYGIENE AND SANITATION.

2140. **International conference of women physicians.** Proceedings. . . September 15 to October 25, 1919. New York, The Woman's press [1920] 6 v. 8°.

Vol. I. General problems of health.—Vol. II. Industrial health.—Vol. III. The health of the child.—Vol. IV. Moral codes and personality.—Vol. V. Adaptation of the individual to life.—Vol. VI. Conservation of health of women in marriage.

Contains: Vol. I.—1. J. Anna Norris: Exercises in colleges, p. 73-79. 2. I. S. Wile: Health classes for children, p. 190-208. 3. Lilian Welsh: Health education in the college, p. 215-27; Discussion, p. 227-33. Vol. III.—4. H. L. K. Shaw: Special factors in management favoring normal development of the child, p. 5-19; Discussion, p. 19-25. 5. S. Josephine Baker: Child hygiene, p. 25-38. 6. Frederick Peterson: Child health, p. 39-45. 7. W. A. McCall: Open air schools, p. 46-62; Discussion, p. 62-64. 8. W. H. Kilpatrick: Value of work in the development of the child, p. 64-77. 9. Grace Fulmer: The value of play in the life of a child, p. 77-90. Vol. V.—10. Robert Rees: Moral education in the army, p. 131-44; Discussion, p. 145-59. 11. M. J. Exner: Sex education in colleges, p. 159-68; Discussion, p. 168-206.

2141. **Daukes, S. H.** The health factor in education. Child (London) 11: 33-47, November 1920.

Discusses educational school service; care of the mentally backward child; effects of physical defects; school derelicts, etc.

2142. **Estes, William L.,** *jr.* The causes and occurrences of functional scoliosis in college men. Journal of the American medical association, 75: 1411-14, November 20, 1920.

Study based on physical examinations of the entering freshman class at Lehigh university, 1912 to 1919, with the exception of 1918. Functional scoliosis is held "to be that form of lateral curvature of the spine in which no permanent bony change is apparent and which disappears with recumbency, i. e., on lying down." Presents therapeutic measures.

2143. **Hill, Lewis W.** Some observations on the trend of modern pediatric teaching. Boston medical and surgical journal, 183: 475-80, October 21, 1920.

Newer ideals in the study and teaching of the diseases of infancy and childhood.

2144. **Hulburt, Ray G.** Live course in hygiene and health. National school digest, 40: 155-57, November 1920. illus.

The work the State teachers college at Kirksville, Mo., is doing in teaching how to diagnose disease.

2145. **Watson, John B.,** *and* **Lashley, K. S.** A consensus of medical opinion upon questions relating to sex education and venereal disease campaigns. Mental hygiene, 4: 769–847, October 1920.

Study based on replies to a questionnaire, which was sent to prominent physicians in the United States by the psychological laboratory of the Johns Hopkins university.

PHYSICAL TRAINING.

2146. **Middle west society of physical education and hygiene.** Papers from the seventh annual meeting. . . Chicago, Ill., April 23–24, 1920. American physical education review, 25: 283–305, October 1920.

Contains: 1. W. P. Bowen: The fundamental essentials of physical education, p. 283–86. 2. Ten minute addresses on the present trend. Athletics [by] J. L. Griffith, p. 286–86; Gymnastics [by] Lydia Clark, p. 287–88; Swimming [by] Tom Robinson, p. 288–90; Play and recreation [by] T. J. Smergalski, p. 290–92. 3. E. D. Caulkins: What physical educators can do to help secure the establishment of universal physical education in this country, p. 301–304.

2147. **Erd, Robert L.** Universal physical education in schools for the deaf. American annals of the deaf, 65: 487–98, November 1920.

Suggests a health program for the physical training of deaf pupils.

2148. **Wittich, George.** Physical efficiency in the city elementary schools. Mind and body, 27: 259–72, November 1920.

Read at the convention of the American physical education association, New York, April 1920.

PLAY AND RECREATION.

2149. **Doeblin, Maud I.** Recreation versus delinquency. School and society, 12: 478–87, November 20, 1920.

The present situation in regard to recreation and delinquency. The writer says that the problem of juvenile crime is largely a problem of play, or opportunity for play. Shows how playgrounds and recreation centers have decreased delinquency.

2150. **Recreation for blind children.** Playground, 14: 481–88, November 1920.

The importance of recreation and some suggestions for indoor and outdoor recreation for blind children.

SOCIAL ASPECTS OF EDUCATION.

2151. **Colborn, Lois,** *and* **Mauren, Signe.** The socialized recitation from the students' standpoint. Education, 41: 171–75, November 1920.

A paper written by two students of the Queen Anne high school, Seattle, Wash.

2152. **Nolan, Ona I.** The socialized program as adapted to the intermediate school. Journal of education, 92: 371–76, October 21, 1920.

Tells how the Emerson school, Boston, furnishes opportunities for the self-activity and social contact of its pupils.

2153. **Phillips, Daniel E.** The school as a community-force. American education, 24: 60–64, October 1920.

Suggests some lines of practical, possible and necessary reforms to make the school a community-force.

2154. **Wiley, George M.** Adjusting the school system to the new world situation through the community center. American education, 24: 113–15, November 1920.

Address delivered at the annual meeting of the National education association, Salt Lake City, July 1920.

Outlines briefly the importance of united community effort in the post-war problems to be worked out.

CHILD WELFARE.

2155. **Cates, Henry Joseph.** The welfare of the school child. New York. Funk and Wagnalls company [1920] ix, 154 p. plates. 12°.

Deals with the conditions of physical and mental health for school children.

2156. **Spielman, M. A.** Romance of child reclamation. London, Reformatory and refuge union, 1920. 144 p. 12°.

RELIGIOUS EDUCATION.

2157. **Beard, Frederica.** Pictures in religious education. New York. George H. Doran company [1920] 157 p. plates. 12°.

2158. **Betts, George H.** The curriculum and the college department of religion. Religious education, 15: 257–63, October 1920.

2159. **Cobern, Camden M.** The Bible in the college curriculum. How shall we relate Biblical teaching to other subjects in the college? Religious education, 15: 264–70, October 1920.

2160. **Kelly, F. J.** The religious study. How students meet Christian influence from time of arrival. University of Kansas news letter, 20: 3–4, October 1920.

Religious life at the University of Kansas, church affiliation of students, etc.

2161. **Rowley, Francis H.** The teacher's helper in humane education. Boston, Mass., The American humane education society, 1920. 31 p. 8°.

MANUAL AND VOCATIONAL TRAINING.

2162. **Huling, Caroline Alden.** Occupational therapy. A door of hope for the maimed. Social progress, 4: 236–38, November 1920. illus.

A résumé of the work that has been done in training the disabled for occupations.

2163. **Kelly, Roy Willmarth.** Training industrial workers. New York, The Ronald press company, 1920. xxi, 437 p. 8°.

"The first comprehensive book on the subject of education in industry . . . written to tell industrial managers and educational directors about the lessons which both school people and manufacturers have learned in shop and factory education," and how to apply these lessons.

2164. **Mock, Harry E.** Reclamation of the physically handicapped. Journal of the American medical association, 75: 1406–11, November 20, 1920.

Emphasizes vocational training, placement and follow-up work.

VOCATIONAL GUIDANCE.

2165. **Reed, Anna Y.** Junior wage earners; prepared especially for the information and use of business men, normal schools, teachers' colleges, public school teachers, and employees of the United States employment service; by Anna Y. Reed, assisted by Wilson Woelpper. New York, The Macmillan company, 1920. xii, 171 p. illus., charts, tables. 12°.

2166. **Wahlstrom, Leonard W.** Problems in vocational advisement and counseling. Manual training magazine, 22: 134–37, November 1920.

AGRICULTURE.

2167. **Myers, C. E.** Aims and organization of agriculture as a secondary school subject. Journal of education, 92: 456–58, November 11, 1920.

2168. **Thomas, Roy H.** Some definite achievements in vocational agriculture. High school journal, 3: 174–76, October 1920.

A brief survey of the project work in vocational agriculture in secondary schools of North Carolina in 1918–19 and other activities for the year 1919–20.

HOME ECONOMICS.

2169. **Arms, Miranda Ray.** What home economics is doing for women. Western journal of education, 25: 4–5, October 1920.

2170. **Baylor, Adelaide Steele.** Vocational education in home economics—part-time schools and classes. Journal of home economics, 12: 473–81, November 1920.

Presented at the thirteenth annual meeting of the American home economics association, Colorado Springs, June 1920.

COMMERCIAL EDUCATION.

2171. **Brush, H. R.** The university and Latin-American development. Quarterly journal of the University of North Dakota, 11: 3–16, October 1920.

The cooperation of the university with business in fitting young men for opportunities in Latin-America.

2172. **Cooper, Clayton Sedgwick.** Training American youth for foreign trade. Educational foundations, 32: 20–28, September 1920.

Reprinted by permission of Advertising and selling.

Certain qualifications for foreign trade which require careful development early.

PROFESSIONAL EDUCATION.

2173. **Federation of state medical boards of the United States.** Report of the committee on classification and standardization of medical colleges. *In its* Monthly bulletin, vol. 6, no. 10, October 1920. p. 262–70.

2174. **The classification of nursing schools.** American journal of nursing, 21: 89–95, November 1920.

A suggestive basis for the grading or classifying of nursing schools, undertaken by the committee on education of the National league of nursing education last year.

2175. **Friesell, H. E.** Progress in dental education. Journal of the American medical association, 75: 1247–49, November 6, 1920.

Discusses development since the founding of the first school; entrance requirements; and enlargement of the dental curriculum.

2176. **Randall, H. J.** A plea for legal studies. Contemporary review, 118: 551–56, October 1920.

Says that a compendious exposition of modern English law in a really readable form is one of the intellectual necessities of the time.

CIVIC EDUCATION.

2177. **Almack, John C.** Making better citizens. Historical outlook, 11: 310–12, November 1920.

The aims in civics instruction, the content of the course, the organization, and the method.

2178. **Jackson, Henry E.,** *ed.* What America means to me; a book of the people, for the people; designed for their use in preparing themselves for the practice of citizenship. Washington, D. C., National community board, 1920. 236 p. col. front., plates (part col.) 12°.

AMERICANIZATION.

2179. **Inter-racial council.** National conference on immigration. Proceedings . . . New York, April 7, 1920. New York, Inter-racial council, 1920. 113 p. 8°.

2180. **Burrall, Jessie L.** Americanization. American education, 24: 70–72, October 1920.

Address delivered at the National education association meeting in Salt Lake City, July 6, 1920.

The Americanization of the children in our public schools today, and their great need of such training.

2181. **Smith, Lewis W.** Americanization in the Thornton township high school. School review, 28: 659–72, November 1920.

Describes an experiment in Americanization conducted in the Thornton township high school, Harvey, Ill., during the spring of 1919, in order "to crystallize the experience for use in later projects of the same kind."

EDUCATION OF SOLDIERS.

2182. **Colby, Elbridge.** Training a citizen army. Education, 41: 152–58, November 1920.

Discusses the educational activities of the Army.

2183. **Howe, Oliver H.** Lessons from the selective military draft. Boston medical and surgical journal, 93: 589–96, November 19, 1920.

Discusses physical and mental defects of soldiers; urges medical inspection of schools; attention to backward pupils, etc.

2184. **Lewis, James C.** Teaching in the army. Chicago, Ill., The University of Chicago press [1920] 64 p. 16°.

"List of references": p. 63–64.

2185. **Borer, J. T.** Educational opportunity in the army of occupation. Mathematics teacher, 13: 36–37, September 1920.

To be concluded. Educational work in the American army of occupation in the Rhine lands.

EDUCATION OF WOMEN.

2186. **Badley, J. H.** Co-education and its part in a complete education. Cambridge, W. Heffer & sons, ltd., 1920. 39 p. 12°.

2187. **Jarach, L.** L'inspection des écoles maternelles; résumé des cours Turgot. Paris, F. Nathan [1920] 2 v. 8°.

2188. **Lape, Esther E.** Teaching the woman voter politics. Forum. 64: 198–208, September–October 1920.

Educational activities in different states. Work of the National league of women voters.

2189. **Odum, Howard W.** Constructive ventures in government. A manual of discussion and study of woman's new part in the newer ideals of citizenship. Chapel Hill, Pub. by the University, 1920. 95 p. 8°. (University of North Carolina. Extension leaflet, vol. 4, no. 1, September 1920)

2190. **Spaulding, Frank E.** Do college women believe in education? Smith alumnae quarterly, 12: 5–13, November 1920.

Prof. Spaulding says that college women believe profoundly and practically in education for themselves, but as for direct service in the public elementary schools college women are distinctly marked for their avoidance of it.

NEGRO EDUCATION.

2191. **Moroney, T. B.** Catholic educational effort for the negroes. Catholic educational review, 18 : 511–23, November 1920.

EDUCATION OF DEAF.

2192. **Goldstein, Max A.** An acoustic method. American annals of the deaf, 65 : 472–81, November 1920.

Author's abstract of an address delivered at the joint convention of American teachers of the deaf, Mt. Airy, Philadelphia, June 29, 1920, on the acoustic method of training the deaf.

2193. **Gruver, Elbert A.** Training of backward deaf children. Volta review, 22 : 687–93, November 1920.

Paper read at the Mt. Airy convention, June 28–July 3, 1920. Discussion by F. W. Booth, p. 693–95; Edith Fitzgerald, p. 695–99.

2194. **Hopson,** ***Miss*** **A. B.** Effects of trade training on the school life and after-school life of our deaf girls. American annals of the deaf, 65 : 481–86, November 1920.

Trade training given at the Oak Lodge school for elder deaf girls, London, England.

EXCEPTIONAL CHILDREN.

2195. **Clark, Willis W.** Success record of delinquent boys in relation to intelligence. Journal of delinquency, 5 : 174–82, September 1920.

Study based on data concerning the relation of general intelligence and success record of 301 boys who have been paroled, furloughed, or discharged from Whittier state school, California.

2196. **Freeman, Frank N.** Provision in the elementary school for superior children. Elementary school journal, 21 : 117–31, October 1920.

Results obtained from a questionnaire sent during the fall of 1919 to all cities in the United States of 25,000 population or over. Replies indicate that the practice of organizing special classes for bright children is growing rapidly. The trend of the replies shows also that it is coming to be widely recognized that provision for bright children needs to be made earlier than the junior high school period.

2197. **Lewis, A. E.** The English education act and the epileptic child; an experience. Education, 41 : 159–65, November 1920.

Describes the work of the Lingfield colony schools, Surrey, England. Mental and physical treatment of epileptic children.

2198. **McCrae, Lee.** A notable school for defectives. Social progress, 4 : 241–42, November 1920. illus.

A brief sketch, showing the methods used at the Training school of Vineland, New Jersey.

2199. **Stinchfield, Sara M.** A preliminary study in corrective speech. Iowa City, University of Iowa, 1920. 36 p. 8°. (University of Iowa studies, no. 39, December 15, 1920. Studies in child welfare, vol. 1, no. 3)

Selected references: p. 35–36.

2200. **Wallin, J. E. Wallace.** Handicapped children. American journal of school hygiene, 4 : 29–53, September 1920.

The inadequate care and education of handicapped children in the United States and some recommendations regarding special types of children.

2201. **Woodill, Edith E.** Public school clinics in connection with a state school for the feebleminded. Mental hygiene, 4 : 911–19, October 1920.

Describes the work of monthly mental clinics in certain sections of Massachusetts, and in the cities of Haverhill, Worcester, Fall River, and New Bedford. Special clinics have been held also at Newton, Taunton, Hyannis, and Falmouth, to examine selected groups of school children. Only the clinics held in connection with the public schools are reported in the article.

EDUCATION EXTENSION.

2202. **Cole, Carlos M.** The Denver opportunity school. Chicago schools journal, 3: 10–13, September 1920.

An address before the National education association.

2203. **Griffith, Elbert W.** The new part-time or continuation school. Journal of the New York state teachers' association, 7: 195–98, October 1920.

Also in American education, 24: 65–69, October 1920.

2204. **Mansbridge, Albert.** An adventure in working-class education; being the story of the Workers' educational association 1903–1915. London, New York, Longmans, Green, and co., 1920. xx, 73 p. plates. 8°.

2205. **Routzahn, Mary Swain.** Traveling publicity campaigns; educational tours of railroad trains and motor vehicles. New York, Russell Sage foundation [1920] xi, 151 p. plates. 12°. (Survey and exhibit series, ed. by S. M. Harrison)

The descriptions and suggestions in this book are drawn from accounts of about 75 tours of trains, trucks, trolley cars, and other vehicles. The information regarding these campaigns is offered for the benefit of those who may contemplate the use of this method of publicity.

2206. Workers' education in Britain. Survey, 45: 253–54, November 13, 1920.

A statistical analysis of education for the masses in Great Britain. Describes the activities of the Workers' educational association.

2207. **Wray, W. J.,** *and* **Ferguson, R. W.,** *eds.* A day continuation school at work. Papers by twelve contributors. London, New York, Longmans, Green, and co., 1920. xii, 212 p. plates. 12°.

LIBRARIES AND READING.

2208. **Downey, Mary Elizabeth.** Relation of the public schools to the various library agencies. Library journal, 45: 883–86, November 1, 1920.

Says "there is little question that many library and school people now desire the establishment of a United States Department of education, including a bureau of libraries."

2209. **Quiller-Couch, Arthur.** On the art of reading. Lectures delivered in the University of Cambridge 1916–1917. Cambridge, At the University press, 1920. viii, 237 p. 8°.

These lectures deal with the topics of Children's reading, Reading for examinations, Value of Greek and Latin in English literature, Reading the Bible, Selection, Use of masterpieces, etc.

2210. **Rice, Frances V.** *and* **Rice, Wallace.** Towards the teaching of civic responsibility in and by libraries. Public libraries, 25: 494–95, November 1920.

Shows how the young may be trained in habits of the unselfish use of public property, by their experience with reference books in the school library.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

2211. Examples of good teaching in industrial education; by William T. Bawden. Washington, 1920. 11 p. (Industrial education circular no. 6, July 1920)

2212. Joy and health through play. The new age-grade-height-weight athletic standard. By George E. Schlafer. Washington, 1920. 19 p. illus.

2213. The national crisis in education: an appeal to the people. Report of the proceedings of the National citizens conference on education called by the United States Commissioner of education, and held at the Washington Hotel, Washington, D. C., May 19, 20, 21, 1920. Ed. by W. T. Bawden. Washington, 1920. 191 p. (Bulletin, 1920, no. 29)

2214. Preliminary survey of the schools of the District of Columbia. Washington, 1920. 15 p. (Bulletin, 1920, no. 36)

2215. Reorganization of science in secondary schools. A report of the commission on the reorganization of secondary education, appointed by the National education association. Washington, 1920. 62 p. (Bulletin, 1920, no. 26)

2216. Report of the Commissioner of education for the year ended June 30, 1920. Washington, 1920. 134 p.

Contains: Pt. I. Some aspects of education in the United States: Higher education, City schools, Tendencies in primary education, Kindergarten education, Rural education, Vocational education, Home economics education, Agricultural education, Educational hygiene, Civic education, Educational legislation, General education board, Library activities.—Pt. II. Activities of the Bureau of education.

2217. Requirements for the bachelor's degree; by Walton C. John. Washington, 1920. 313 p. (Bulletin, 1920, no. 7)

2218. Rural school playgrounds and equipment; by K. Cecil Richmond. Washington, 1920. 12 p. (Teachers leaflet no. 11, October 1920)

2219. A school building program for Meriden, Connecticut; by Alice Barrows Fernandez. Washington, 1920. 26 p. (Bulletin, 1920, no. 22)

2220. Statistical survey of education, 1917–18; prepared by the Statistical division of the Bureau of education, under the supervision of H. R. Bonner. Washington, 1920. 48 p. (Bulletin, 1920, no. 31)

2221. Statistics of public high schools, 1917–18; prepared by the Statistical division of the Bureau of education, under the supervision of H. R. Bonner. Washington, 1920. 192 p. (Bulletin, 1920, no. 19)

2222. Survey of the schools of Brunswick and of Glynn county, Georgia. Washington, 1920. 82 p. (Bulletin, 1920, no. 27)

2223. Training teachers for Americanization. A course of study for normal schools and teachers' institutes; by John J. Mahoney, with a chapter on Industrial classes, by Frances K. Wetmore and on Home and neighborhood classes, by Helen Winkler and Elsa Alsberg. Washington, 1920. 62 p. (Bulletin, 1920, no. 12)

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of Education

DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 46

ORGANIZATION OF STATE DEPARTMENTS OF EDUCATION

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WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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Feb. 28. 1921

INTRODUCTION.

Like Topsy our State departments of education have "just growed up." Few of them can look back to any definite birth as State departments of education. Very few, if any, except those that have been recreated by recent acts of legislatures or constitutional amendments have been thoughtfully created and organized in full consciousness of the functions they should perform. From small and inadequate beginnings they have grown by accretion rather than by development from any central idea of functions to be performed, as the small independent schools of separate and individual communities have coalesced to form county and State systems. Probably a majority of them had their origin in a State school officer under the title of superintendent of public instruction, superintendent of schools, or other similar title, who took over work mostly of a clerical nature previously performed by the State auditor or treasurer and in an ex officio board of education made up of political officers elected or appointed for other and very different functions. The time and energies of these officers were absorbed by the duties properly belonging to the offices to which they were appointed or elected. They very naturally considered those duties more important than the incidental or accidental duties pertaining to the office which they held only because they had been selected to fill other offices considered of sufficient importance to have an existence of their own and to be filled by persons supposed to be able to perform intelligently and acceptably the duties belonging to them.

State school officers, taking over the duties, chiefly clerical, which had been performed by auditors or treasurers and other State officers in fragments of their time and probably without additional pay, were paid little. In most of the States the mistake was made of supposing that this office could be made a political office subject directly or indirectly to the vicissitudes of partisan government, as if, forsooth, the political parties as such ever advocated different educational policies and as if the people would tolerate partisan influence in their schools. As a political office, elective or appointive, it did not formerly, and in some States does not now, rank with other political offices in pay, in prestige, or as a stepping-stone to political preferment considered of a higher grade and more desirable. Nominating conventions have all too often left this office to the last and then chosen a candidate for it to placate some partisan or sectarian faction or to give recognition to some neglected section of the State. Governors, in appointing chief school officers, have frequently been guided by similar motives, or, worse still, have made this appointment through personal favoritism or in recognition of partisan obligation.

In the meantime education has come to be the chief business of the States. For its support the State and local units of county, township, district, and municipality spend more money annually than for any other one thing of public concern. The public-school system, including elementary schools, high schools, colleges, universities, normal schools, and other professional and technical schools, and agencies for extension education, has come to be our greatest cooperative enterprise, requiring for its management and control professional and administrative ability of the very highest character. This all thoughtful persons informed on the subject are beginning to realize, but, as is plainly shown by statistical tables in this study of the organization of State departments of education, the practices of the day of small things in education still exist in many States to an extent dangerous if not fatal to the best interests of education. Chief school officers in most of the States are still paid salaries pitifully small as compared with what are, or should be, recognized as the duties of their office. They are elected on partisan political tickets, or without full regard to their professional or administrative ability are appointed by governors so elected. Most State boards of education are wholly or partly made up of persons elected or appointed for the performance of other and quite different duties in offices supposed to be worthy of being filled by persons elected or appointed directly to them. Other boards are indefinitely constituted. The office of the State superintendent in almost all of the States is so poorly staffed that it is wholly unable to perform effectively most of its proper functions and to give to the school system of the State the administrative and professional service it should have.

Within the last decade much improvement in these conditions has been made in some States, and in a very few States conditions are approaching the ideal. There is, I believe, no other task of statesmanship so important and so nearly common to all the States as this of reconstructing or remaking the State department of education so that it may, wholly separate from and independent of partisan politics, be adequate to the full performance of its legitimate functions and free to adjust and readjust itself to the constantly changing requirements of education as may be necessary to meet the ever developing and enlarging needs and demands of the expanding, rich, and throbbing life of society, State, and Nation. The sooner this is done the better it will be for education and for all that is dependent upon it.

As a basis for the reconstruction of the State departments of education, I submit the following suggestions, the soundness of which, I feel sure, will be proven by a careful reading of this bulletin and by any further comprehensive study of the subject.

1. Educational administration has in principle, and should have in practice, no direct relation to partisan politics as we know partisan politics in this country. The public school system of any State is its greatest cooperative enterprise, supported by all the people in proportion to their ability, regardless of the amount of their wealth, and regardless of any political or religious affiliations, in order that all the children of all the people may, regardless of their poverty and all other conditions, have as nearly as possible equal and full opportunity for the education that will best develop their individuality, and prepare them for life, for making a living, and for the duties and responsibilities of democratic citizenship. From the standpoint of statesmanship and the public welfare, all the people are interested alike in the schools. Our political parties do not differ in regard to educational principles or practices any more than they do in regard to the Ten Commandments or the moral code; and to attempt to make education a matter of partisan politics is good neither for education nor for politics. Education is the largest and most important part of what has well been called our "purposive government," through which all the people are served and united, rather than controlled under policies on which the people are divided into parties. Unusual ability and devotion are required for the wise and effective administration of the system of education involving the expenditure of many millions of dollars annually (the average for the States is now not less than twenty-five million dollars); the direction and professional assistance of many thousands of school officers and teachers (an average of from fifteen to twenty thousand to the State); and the promotion of fundamental policies affecting directly the lives and destinies of hundreds of thousands of children and youth (an average of approximately five hundred thousand to the State), and directly or indirectly determining the welfare of all the people and the destinies of State and Nation.

2. The nature of its work and the relations of the State department of education are such as to make necessary much wise counsel, as well as definite administrative action. Well-considered policies are frequently more important than quick action. Constant and conservative development is much better than a succession of special "drives" for particular purposes, however effective they may be temporarily, and more fruitful in educational results than a disconnected succession of personal administrations, however brilliant.

For the effective application of these principles, State departments of education should be organized somewhat as follows:

1. A State board of education, nonpartisan, nonprofessional, made up of men and women of affairs, selected from the State at large because of their fitness for this position rather than for their fitness for some other. They should be men and women of recognized ability, sterling character, breadth of mind, and nobility of purpose, catholic in thought and feeling, devoted to the public welfare, convinced of the importance of education, and willing and able to give time and energy to the duties of their office. The members of the board should represent fairly all sections of the State, rural and urban, and the main professions, occupations, and interests of the people. They should be men and women in close touch with the great interests of society and State, capable of representing the people worthily in planning for the results which they should expect from their schools and other agencies of education, and in formulating fundamental policies for the support, control, and development of the State system of education and all its more important parts.

The State board of education should consist of seven or nine members, serving for seven or nine years, the term of one member expiring each year, so as to give to the board continuity and constant newness. No person having served more than half of the full term should be eligible to reappointment or reelection. No person should hold membership in the board except through definite appointment or election. There should be no ex officio members.

If necessary for convenience of appointment or election the term of office should be made such as to make the term of two members to expire every second year. Members of the board should be elected by the people from the State at large, or they should be appointed by the governor and confirmed by the senate, as may seem best in any State; but, however chosen, no person belonging to any political party should be eligible for appointment or election when more than half of the members of the board are of that party. Members of the board should not be removable from office except for negligence of duty, malfeasance in office, or crime against the State, and then only by impeachment, or, if elected by the people at large, by impeachment or recall by a majority vote. This is necessary to prevent the removal of members or packing of the board for sinister purposes and to give the feeling of responsibility and freedom necessary for good service. Members of the board should not be paid a salary, but should be paid a very liberal per diem and all necessary expenses for a reasonable number of days in the year for attending meetings of the board and for necessary service on committees. Small salaries would attract men and women of small ability. Large salaries would tempt members to try to earn their salaries by meddling with executive details properly belonging to the paid employees of the board. Not to pay reasonable per diem and all necessary expenses would deter many men and women eminently qualified for such service from accepting membership on the board.

Ordinarily the board should not need to have more than four or five regular meetings, of five or six days each, in the year, and there should be need for very few special meetings.

The State board of education should have general control of all the educational interests of the State as embodied in the public elementary and secondary schools for normal children, in schools for special classes of children, as the deaf, the blind, the crippled, subnormal and incorrigible children, and in schools for special kinds and phases of education. There should not be separate boards for the control of vocational and technical education, nor should there be any other division of control that tends to break the system of education into disconnected fragments. The State board of education should also have general control of the schools for the professional preparation of teachers, normal schools, and teachers' colleges. Whether this board should also have a general control of the State schools of higher education, other than those whose chief function is to prepare teachers, is a matter which must be left for each separate State to decide. There is as yet no experience sufficient to enable one to judge intelligently in regard to this. The same is true in regard to the policy of having separate boards for each of the two, three, or four such schools in a State. It is quite clear, however, that any separate board or boards for such schools should be required by law to make to the State board of education such reports as it may request and should cooperate with the State board of education in such way as to harmonize and unify the work of the schools of higher education with the work of the other schools of the system. This is of the greatest importance, since for the best results all the schools of the State of whatever kind and grade must function as one organism, the life blood flowing through it all.

The board should understand its functions to be wholly legislative—the defining of results to be obtained and the formation of policies in harmony with the constitution and laws of the State; and, when desirable, to propose new laws or modifications of laws already in existence. It should never concern itself with executive details, and its members should remember that, like other legislative bodies, when not in formal session, the board has no power to function as such, and its members no powers or responsibilities unless definitely authorized by the board as a whole to carry out some particular function committed to them. Legislators are only private citizens, possessed of no official functions when the legislative bodies to which they belong are not in formal session. In this sense the State board of education (and all other boards of education) are legislative bodies. For the executive duties of the department, the board of education should elect a chief executive, a commissioner of education, and upon his recommendation and under proper regulations all his associates and assistants. Only fitness for the work to be done should be considered in the selection of any of these. The board should elect its own chairman from year to year. The commissioner of education should be its secretary.

2. A State commissioner of education elected by the State board of education from the country at large and only because of professional preparation and administrative ability. Many able and efficient chief school officers have come into office by popular election or by gubernatorial appointment. Both methods have some advantages, but neither can be considered as sure and reliable as appointment by a nonpartisan board. No other method of selection is rational if this officer is to be responsible to the board. The term of office should have no reference to the change of officers connected with the partisan government of the State. It should be indefinite or for a period of years long enough to make possible the consistent development of administrative policies.

The commissioner of education should be the executive officer of the State board of education, and, under its general control, should have charge of the entire public-school system of the State and should be given such freedom of action as is necessary for executive efficiency. Under any right conception of the duties and responsibilities of the office of State commissioner of education, it must be regarded as the most important educational office in the State, requiring knowledge and ability of the highest order. Its requirements and compensations should be in keeping with this conception. It is only reasonable that the salary of the commissioner of education should be as large as or larger than that of any other officer of education in the State, city or county superintendent of school, or the president of any normal school, college or university.

3. A competent staff of expert deputies, assistants, and clerks, appointed by the State board of education upon the recommendation of the commissioner of education. The size and organization of this staff will, of course, vary from State to State. There should, however, in all States be separate and well organized divisions for all the more important phases of the educational work of the State, and for such administrative tasks as the collection and preparation of statistics and the promotion of general educational interests. The organization of the department of education of the State of Alabama, which follows closely recommendations made by the United States Bureau of Education, illustrates fairly well what is needed for States of average size. In Pennsylvania, New York, and Massachusetts the departments of education approach the ideal for the larger States.

More important than the size of the staff is the character of its personnel. The heads of the several divisions of this staff and their principal assistants should be men and women of the highest and best ability. To a very large extent the efficiency of the department and the character of all the educational work of the State will depend upon the character of these men and women. As the commissioner of education, they should be chosen from the country at large and only for their fitness for the work to be done. Salaries and conditions of service should be such as to enable the board of education to obtain and hold in these positions the services of the most competent men and women. False economy here can not fail to have its evil effect throughout the entire school system, and the effect may be disastrous. Even for the sake of economy in the department itself, it is important that responsible heads of divisions should be chosen to direct effectively the activities of the clerical assistants. The principles generally recognized in business, which demand efficiency in responsible positions at any reasonable cost, rather than the practice too often found in government offices which sacrifices efficiency to cheapness, should be observed. The value of the return from the expenditure of millions of dollars of public funds for education, of the other millions which parents and guardians expend privately that the children may attend school, and of all the time and energy of children, teachers, and local school officers, depends to a large degree upon the character and efficiency of the department of education. Cheap policies and bad business principles should not be tolerated here.

Responsible officers in the State department of education are, or should be, the guides and leaders of the people in all matters pertaining to education, upon which, in a democracy like ours, all else waits. It is neither good nor safe that the leaders be weak or blind. Where there is no vision, the people perish. Where there is weakness in place of strength, there can only be stagnation and death where there should be progress and life.

P. P. Claxton,
Commissioner.

ORGANIZATION OF STATE DEPARTMENTS OF EDUCATION.

CONTENTS.—State boards of education—composition, appointment, size, powers and duties, laws relating to. State superintendent of public instruction—title, term of office, manner of selection, powers and duties, laws relating to. Staffs of State departments of education—number of officers, compensation, laws relating to.

STATE BOARDS OF EDUCATION.

The movement toward the establishment of the State board of education as the administrative head of the educational system continues to gain ground. At the present time there are 42 States having such boards with functions relating to the common schools. Of the other 6 States, Iowa, Nebraska, Ohio, and South Dakota have boards known as State boards of education with functions restricted, in Iowa to the charge of State institutions of higher education, including the State normal college; in Nebraska to the administration of State normal schools; and in Ohio and South Dakota to the administration of the vocational education laws. Only Illinois and Maine have no board known as the State board of education, but both have State boards for vocational education, the establishment or designation of such boards being necessary to enable the States to participate in the funds appropriated by Congress for the promotion of vocational education.

Composition of State boards of education.—The composition of the boards having functions relative to the general school system in the several States is shown in the accompanying table (see p. 10). The table shows the number of ex officio members in each board, the officers designated as ex officio members, number of appointive or elective members, by whom appointed or elected, length of term, etc.

Of the 42 State boards of education, 8 are composed entirely of ex officio members who are officers of the State with offices at the State capitol. These are Colorado, Florida, Kentucky, Mississippi, Missouri, North Carolina, Oregon, and Texas. In one other State, Nevada, the board is composed entirely of ex officio members, the president of the State university being a member, in addition to the governor and State superintendent of public instruction. Boards created in recent years consist entirely or almost entirely of members appointed by the governor. Seven boards have no ex officio members whatsoever. The governor is an ex officio member of the board in 18 States; other State political officers, aside from the State superintendent of public instruction or other chief State school officer, in 13 States; the State superintendent in 30 States; the president of the State university in 6 States; the president of the State agricultural and mechanical college in 4 States; presidents of State normal schools in 4 States; and other educational officers in 1 State.

Appointment of the State board of education.—Of the 33 States having appointed or elected members on the State board, 27 leave the appointment to the governor, subject in some cases to approval by the State senate; in 2 States, New York and Rhode Island, the members are selected by the State legislature; 1 State (Michigan) elects by popular vote; in 1 State (Wyoming) the State superintendent appoints members, subject to approval by the governor; in 1 State (Virginia) 3 members are elected by the State senate and 2 by the State board; and in 1 State (Wisconsin) the governor appoints 5 members, and the university board of regents, normal school regents, and vocational education board each selects 1 member.

With respect to qualifications of members, 4 States, Arizona, Kansas, Virginia, and Washington, require that all the appointive members shall be persons engaged in educational work, and 7 others, Georgia, Indiana, Massachusetts, New Mexico, Oklahoma, Pennsylvania, and West Virginia, require that a certain specified number of the appointed members shall be engaged in educational work. California, Idaho, and New York require that none of the appointed members shall be engaged in educational work, while Indiana requires that 2 of the members shall not be engaged in such work.

The tendency in the selection of board members seems to be toward appointment by the governor. This method, under proper restrictions, has a threefold merit:

(*a*) It recognizes the executive head of the State as responsible to the people for the efficiency of every department of the public service. It tends to make the board responsible to the public.

(*b*) It centers responsibility where it can be definitely located. When the general assembly elects, it is difficult to locate responsibility.

(*c*) Requiring that appointments be made from an eligible list, or in some other way throwing proper definite limitations around the appointing power, provides against abuse and protects the board from undue political interference. It is doubtful if it is ever advisable to make the governor a member of the board.[1]

Size of board and term of office.—The size of boards varies from 3 to 13 members. Of the 9 boards composed entirely of ex officio members, 6 have 3 members each, 1 has 4 members, 1 has 5 members, and 1 has 7 members. Of the 7 boards having no ex officio members, 3 have 5 members each, 2 have 7 members each, 1 has 8 members, and 1 has 12 members. Of the 26 boards having both ex officio and appointive or elective members, 7 have 7 members, 5 have 8 members, 4 have 6 members, 3 have 9 members, 2 have 10 members, 2 have 11 members, and one has 4, one 5, and one 13 members. Taken all together, 10 of the boards are composed of 7 members each, and in 28 of the 42 boards the number of members ranges from 5 to 9, both inclusive. The tendency, therefore, is in favor of a comparatively small board.

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[1] Education Bulletin, 1915, No. 5.

The terms of office of ex officio members who are State officers terminate, of course, at the expiration of the term for which they were elected to the State office. Such terms are usually 2 or 4 years. In 24 of the 33 States having appointive members, the terms are from 4 to 6 years, inclusive; in 2 States, 2 years; 1 State, 3 years; 2 States, 7 years; 1 State, 8 years; 2 States, 12 years; and in 1 State the term is indefinite. Appointments are so arranged that usually the members retire in small groups, assuring continuity of policy.

Duties and powers of State boards of education.—The duties and powers of State boards are given in considerable detail in the tabular statement on pages 11 to 22. These vary from practically nothing to complete control of the entire educational system of the State. The general tendency, however, is toward making the State board the responsible authority and giving it greater powers. A notable exception is the State of Massachusetts, where formerly the State board had large responsibilities and much power. This was changed by an act of the legislature, passed in 1919, which makes the State board of education merely advisory to the State commissioner of education. This was offset, however, in the same year by Alabama, Minnesota, and New Hampshire, which created State boards of education with very large powers over the general educational systems.

In only a few States are the boards or State superintendents given definite authority to require reports from or to exercise any supervision over schools under private or corporate control. Strictly speaking there are no private schools in the United States, as all of them depend upon the public or some part of the public for their students and for their support, and their property is exempt from taxation. State authorities should be authorized to ascertain whether students attending such schools are receiving instruction to the extent at least of that prescribed by the compulsory education laws. Every educational agency in the State is a part of the State's educational system and should be under the general administrative supervision of the State board of education to such extent as may be necessary to insure instruction in essentials equal to that given in the public school, but no further.

Summary of tendencies.—In the development of a more effective agency for administering the State's educational affairs the trend is toward a State board of education as the administrative head of the educational system; a board composed of men who have some knowledge of the business which they are to administer; a board appointed by the governor of the State with restrictions to guarantee fitness for the service and to guard against arbitrary use or abuse of the appointing power; a board composed of from five to nine members, appointed for a term of from four to six years, and retiring in small groups—this to guarantee that degree of continuity in service and freedom from political interference that are necessary for effective service; a board made responsible for all the educational interests of the State and clothed with full power to administer the business.

Composition of State boards of education.

States.	Ex officio members.							Appointed or elected members.					Total ex-officio members.	Total appointed or elected members.	Total number on board.
	Governor.	Other State political officers.	State superintendent of public instruction.	President of State university.	President of agricultural and mechanical college.	President of State normal school.	Other education officers.	In educational work.	Not in education work.	May or may not be in education work.	Appointed or elected by—	Term in years.			
Alabama	1		1							6	Governor	12	2	6	8
Arizona	1		1	1		2		3			do	(1)	5	3	8
Arkansas			1							7	do	7	1	7	8
California									7		do	4	0	7	7
Colorado		2	1										3	0	3
Connecticut	1	1								9	Governor	6	2	9	11
Delaware										5	do	5	0	5	5
Florida	1	3	1										5	0	5
Georgia	1		1					3		1	Governor	4	2	4	6
Idaho			1						5		do	5	1	5	6
Indiana			1	1	1	1	3	3	2	1	do	4	7	6	13
Kansas			1	1	1	3		3			do	2	6	3	9
Kentucky		2	1									4	3	0	3
Louisiana			1							5	Governor	5	1	5	6
Maryland										7	do	7	0	7	7
Massachusetts			1					1		5	do	3	1	6	7
Michigan			1							3	Popular vote	6	1	3	4
Minnesota										5	Governor	5	0	5	5
Mississippi		2	1										3	0	3
Missouri	1	2	1									4	4	0	4
Montana	1	1	1							8	Governor	4	3	8	11
Nevada	1		1	1									3	0	3
New Hampshire	1									5	Governor	5	1	5	6
New Jersey										8	do	8	0	8	8
New Mexico	1		1					3		2	do	4	2	5	7
New York									12		State legislature	12	0	12	12
North Carolina	1	5	1										7	0	7
North Dakota		1	1							3	Governor	6	2	3	5
Oklahoma			1					2		4	do	6	1	6	7
Oregon	1	1	1										3	0	3
Pennsylvania			1					3		3	Governor	6	1	6	7
Rhode Island	1	1								6	State legislature	6	2	6	8
South Carolina	1		1							7	Governor	4	2	7	9
Tennessee	1									9	do	6	1	9	10
Texas	1	2											3	0	3
Utah			1	1	1					6	Governor	6	3	6	9
Vermont										5	do	5	0	5	5
Virginia	1	1	1					5			State senate, 3 State board, 2	4 2	3	5	8
Washington			1	1	1	1		3			Governor	2	4	3	7
West Virginia			1					3		3	do	6	1	6	7
Wisconsin	1		1							8	(2)	[3]5	2	8	10
Wyoming			1							6	State superintendent.[4]	6	1	6	7

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[1] Indefinite.
[2] Governor appoints 5 members, university board of regents 1, normal school regents 1, vocational education board 1.
[3] Governor's appointees.
[4] With approval of governor.

Digest of laws relating to State boards of education.

State.	Members.	Term.	Composition.	Compensation.	Organization.	Powers and duties.
Alabama (General laws, 1919.)	8	Appointed members, 12 years.	Governor and State superintendent ex officio; 6 members appointed by governor from persons not subject to board's authority.	$10 per day not exceeding 25 days in any year and actual traveling and other necessary expenses in attending meetings and transacting business of board.	State superintendent is ex officio chairman and executive officer; board elects one of its members vice president.	General control and supervision over public schools except the 3 institutions of higher education; adopts rules and regulations for the sanitation of schools, physical examination of school children, and enforces, in conjunction with other State authorities, rules relating to school health compulsory education, and child conservation; prescribes rules for grading and standardizing public schools; prescribes minimum contents of courses of study for public elementary and high schools; prescribes textbooks for all elementary schools and for all high schools except in cities of 2,000 or more inhabitants; prescribes rules for certification of teachers and for biennial school census; prescribes forms and blanks for use of local boards; requires all private, denominational, and parochial schools to submit annual reports; conducts investigations into educational needs of the State; administers vocational education; general supervision of educational work of all charitable, penal, reformatory, and child-caring institutions maintained in whole or in part by the State; equalizes public school facilities.
Arizona (School laws, 1919, pp. 15, 16, 122.)	8	Indefinite	Governor, State superintendent, president of State university, and principals of State normal schools ex officio, and a city superintendent, a county superintendent, and a principal of a high school appointed by the governor.	Necessary transportation expenses incurred in attending meetings of board and other expenses not to exceed $4 per day.	Governor is chairman and State superintendent is secretary.	Adopts rules and regulations for government of the public schools and school libraries; devises plans for increase and management of State school fund; prescribes and enforces use of a uniform series of textbooks in common schools; prescribes and enforces course of study in common schools; determines number of units necessary for graduation from high schools; prescribes requirements for admission to State university and normal schools; general charge of education of deaf, dumb, and blind; issues life certificates for teachers; revokes all teachers' certificates; administers vocational education.
Arkansas (Act 431, June 1, 1911.)	8	Appointive members, 7 years, 1 appointed each year.	State superintendent, ex-officio, and 1 member appointed by the governor from each congressional district.	Serve without pay, except for traveling expenses when attending meetings of the board.	Superintendent is ex officio chairman; one prescribed meeting annually, superintendent may call others; secretary elected by board.	Has general supervision over the public schools of the State; has the management and investment of the State common school fund; serves as board for chartering educational institutions; has supervision over the issuance of State teachers' certificates; may provide courses of study, distribute plans for schoolhouses, prescribe rules for the sanitary inspection of schoolhouses and medical examination of school children, but may not prescribe textbooks; administers vocational education.

Digest of laws relating to State boards of education—Continued.

State.	Members.	Term.	Composition.	Compensation.	Organization.	Powers and duties.
California (School laws, 1919.)	7	4 years	Appointed by governor; no salaried educational officer may be appointed.	Expenses in attending meetings and $15 per day for each day board is in session; expenses and $10 per day while engaged in committee work directed by board; total not to exceed $2,500 per year.	Board elects its own president; State superintendent is secretary of board and its executive officer; meets every quarter; vote of majority of all members necessary to validate its acts.	Adopts rules for government of day and evening elementary schools, day and evening secondary schools, technical and vocational schools, normal schools, and all other schools, except the State university, receiving financial aid from the State; appoints 3 assistant State superintendents; makes plans for the improvement of the administration and efficiency of the schools; makes recommendations concerning changes in school legislation; compiles and adopts uniform textbooks for elementary schools which are printed by the State and distributed free; grants credentials for teachers; accredits normal schools and universities for certification purposes; administers vocational education; enforces provisions for establishment of courses in physical education and appoints supervisor; adopts minimum requirements for graduation from State normal schools; prescribes list of textbooks from which local high schools must select; calls annual convention of high-school principals; constitutes retirement salary fund board.
Colorado (Const., Art. IX: secs. 1 and 16; School laws, 1917, pp. 145-147.)	3		Superintendent of public instruction, secretary of state, and attorney general.		Superintendent is president; meets in December and at other times when necessary; adopts rules for its own government.	Has general supervision of the public schools; determines appeals from decisions or orders of county superintendent; appoints State board of examiners; grants State diplomas to teachers and may revoke them; may not prescribe textbooks (constitution prohibits); supervises State teachers college.
Connecticut (Acts of 1919, ch. 344.)	11	Appointed members, 6 years.	Governor and lieutenant governor, ex officio; 9 members appointed by the governor, at least 1 from each county.	Necessary expenses.	Appoints own officers; employs a secretary who acts as its executive officer and performs the duties generally assigned to a State commissioner of education.	Has general supervision and control of the educational interests of the State; may direct what textbooks shall be used; prescribes blanks for registration and reports; conducts teachers' meetings; prepares and distributes outlines of instruction in citizenship; may grant and revoke teachers' certificates; provides for testing the eyesight of children; enforces child-labor law; maintains and controls State normal schools; may appoint school superintendents and supervisors for certain smaller towns; administers vocational education.
Delaware (Acts of 1919, ch. 157.)	5	5 years	Appointed by governor, 1 each year.	Necessary expenses and $10 per day not to exceed 1 day per calendar month.	State commissioner of education is secretary and executive officer; other officers elected by board.	Has general supervision of public schools; makes and enforces rules and regulations for the conduct of schools; prescribes textbooks and contracts as to prices; regulates course of study; determines conditions for teachers' certificates; makes rules for sanitary construction and inspection of school buildings; investigates needs of schools and may require reports from teachers and school officers;

						recommends legislation; administers laws relating to physical education, medical inspection, vocational education, dependent children; grants aid to consolidated schools; requires annual reports from private schools; regulates issuance of diplomas and degrees; prepares annual budget for school expenditures; cooperates with Delaware College in maintaining summer school for teachers and in fixing course of study for department of education in said college.
Florida............. (Const., Art. XII, sec. 3; school laws, 1915, pp. 14, 15, 25, 102; acts of 1919, chs. 7592, 7910, 7911.)	5	....	Governor, secretary of state, attorney general, State treasurer, and State superintendent of public instruction.	....	Governor is president, State superintendent is secretary, and State treasurer is treasurer.	Manages school lands and educational funds of the State; decides appeals from county authorities on school affairs; may remove any subordinate officers; fills vacancies for unexpired terms on county school boards; holds property of and, in conjunction with a board of control, manages higher institutions of learning; administers vocational education; issues minimum State courses of study for elementary and high schools; prescribes course in military instruction in high schools.
Georgia............ (School Code, 1919, pp. 6-9.)	6	Appointed members, 4 years, 2 appointed every 2 years.	Governor, State superintendent, and 4 members appointed by the govenor, at least 3 of whom shall be experienced educators.	Appointed members $250 per annum and expenses not exceeding $200 for the four appointed members.	Governor is chairman, State superintendent is secretary and chief executive officer; meets at least quarterly.	Provides rules and regulations for the supervision of all schools in the State; provides courses of study for elementary and high schools; selects textbooks; decides appeals from decisions of State superintendent; provides normal instruction for teachers; grants State and special licenses to teach; apportions school funds; approves proposed charters for institutions granting degrees and issuing diplomas; acts as State school book commission.
Idaho............... (Const., Art. IX, sec. 2; school laws, 1919, pp. 11, 12, 13.)	6	Appointed members, 5 years, 1 appointed each year.	Superintendent of public instruction, ex officio, and 5 members appointed by governor.	$100 per annum each, and necessary expenses.	Elects such officers as it deems necessary; meets at least twice each year.	Has general control of State institutions and succeeds to powers and duties of trustees of such institutions; appoints a commissioner of education as an advisory officer; assigns functions to its executive officers; has general supervision and control of public schools; is final court of appeal in controversies; has legislative functions not inconsistent with law; recommends to legislature changes in school laws; standardizes instruction in institutions; prescribes minimum course of study for public schools; determines how textbooks shall be adopted; determines whether textbooks shall be free; directs the work of summer normals and teachers' institutes; controls certification of teachers; directs State library commission; standardizes school buildings, equipment, etc.; adopts system of reports; classifies high schools; controls rural high schools; acts as State board for vocational education.

Digest of laws relating to State boards of education—Continued.

State.	Members.	Term.	Composition.	Compensation.	Organization.	Powers and duties.
Indiana (School laws, 1917, pp. 24, 25, 38, 39, 40, 41, 44, 45, 380, 381, 403.)	13	Appointive members, 4 years.	State superintendent, president of the State university, president of Purdue University, president of State normal school, superintendents of schools in 3 largest cities, ex officio; 3 citizens engaged in educational work, at least 1 of whom shall be a county superintendent, and 3 persons interested in vocational education, 1 of whom shall be an employer and 1 an employee.	Members other than superintendent receive $5 per day and expenses while actually on duty.	Superintendent is president; board elects one of its members secretary and treasurer; meets on the call of the president or a majority of the members.	Determines such administrative questions as are not otherwise provided by law; grants and revokes State certificates; selects or procures the compilation of textbooks for the common schools; constitutes teachers' training board and provides normal instruction; makes rules for the enforcement of the medical inspection law; appoints a board of three visitors to State normal school; appoints trustees of Indiana University; appoints and directs a high-school inspector; prescribes course of study for accredited normal schools; has control of State-aided vocational schools; grants "accredited" rank; issues life certificates and has power to revoke same; classifies graduates for minimum wage; keeps list of approved schools in other States; prescribes course in physical training for elementary and high schools; administers vocational education.
Kansas (School laws, 1913, pp. 23–29, 32, 34, 36, 143, 157, 167–169; session laws, 1919.)	9	Appointive members, 2 years.	State superintendent of public instruction, chancellor of State University, president of the State Agricultural College, president of 3 State Normal Schools, ex officio, and 3 others appointed by the governor from those engaged in school work.	Necessary expenses in attending meetings.	State superintendent is ex officio chairman; permanent secretary, salary, $2,400, with office in Department of Public Instruction.	Prescribes course of study for normal institutes and for public schools, but certain subjects prescribed by law must be included; approves courses of study of colleges and universities for purpose of granting State certificates for teaching; issues and may revoke State diplomas and certificates; adopts rules for the examination of kindergarten teachers; prescribes normal training courses in high schools; prepares examination questions for county teachers' certificates; prescribes course of study for rural schools; prepares examination questions for common school diplomas; distributes State funds to approved schools.
Kentucky (School laws, 1912, pp. 10, 28, 71.)	3	4 years.	Superintendent of public instruction, secretary of state, and attorney general.	None.	Superintendent is chairman; 2 members constitute a quorum; meets on call of the chairman.	Manages all real or personal property held by the State for the benefit of the common schools; makes rules and regulations for the government of the common schools and prescribes and publishes a course of study for them; prescribes regulations for the management of county teachers' libraries and prepares lists of books for subdistrict libraries; issues State teachers' certificates.
Louisiana (School laws, 1919, pp. 124–126, 137, 138.)	6	Appointed members, 5 years, 1 appointed each year.	State superintendent ex officio and 5 members appointed by governor.	Actual traveling expenses and per diem for each day board is in session.	Board elects president and vice president; State superintendent is secretary.	Prepares rules and by-laws for the government of the public schools; gives directions as to branches of study taught; adopts textbooks and enforces uniformity; fixes procedure for awarding contracts, locating depositories, etc., for the distribution of books; may require parish superintendents to make reports; may order holding of teachers' institutes; has charge of examination of teachers and issues certificates; approves establishment of high schools; extends special aid to schools meeting required standards in practical, industrial, and agricultural courses; administers vocational education.

Maryland (School laws, 1918, pp. 6–27.)	7	7 years, 1 appointed each year.	7 members appointed by governor; no person to be appointed who is in any way subject to the board's authority.	Actual expenses incurred in discharge of official duties.	Board elects its own officers; State superintendent is executive officer; holds regular meetings quarterly.	Enacts by-laws for administration of the public school system; has general control of all other school boards; prescribes rules for grading and standardizing public schools; defines colleges and high schools; prescribes minimum requirements for diplomas and degrees; may adopt courses of study and general regulations governing teachers' certificates; makes report to governor and recommendations in form of bills to general assembly; with State superintendent serves as trustees for State normal schools; adopts blank forms for records and reports for all public schools; may conduct investigations; prepares public-school budget.
Massachusetts (Laws of 1919, ch. 350.)	6	3 years, 2 appointed each year.	6 members appointed by governor; at least 2 shall be women and 1 shall be a teacher.	Actual necessary expenses.	Commissioner of education is chairman; meets at least once a month.	The board is merely advisory to the commissioner of education.
Michigan (Const., Art. XI, sec. 6; school laws, 1919, pp. 8, 11, 109, 110, 200–204, 205, 206, 207, 209, 241.)	4	Elective members, 6 years.	Superintendent of public instruction, ex officio, and 3 members elected by vote of the people.	$3 per diem each and actual expenses.	Superintendent is secretary and executive officer; majority constitutes a quorum; holds at least 2 meetings each year.	As body corporate, holds property of State normal schools and has general supervision of them; prescribes courses of study in such schools and grants diplomas to graduates; grants teachers' certificates to graduates of State normal schools and approved colleges and may indorse certificates from other States; approves textbooks on physiology and hygiene for all public schools.
Minnesota (Laws of 1919, ch. 334.)	5	5 years	5 members appointed by governor.	Actual expenses and $10 per day for each day spent in discharge of duties.	Board elects president; commissioner of education is executive officer and secretary.	Makes complete organization of State department of education; appoints and defines duties of appointees and employees; administers all laws relating to State superintendent of public schools, libraries, and other public educational institutions excepting State university and normal schools; makes studies and investigations relating to administration of funds appropriated for public school aid; prepares a biennial education budget.
Mississippi (Const., Art. VII, sec. 203; school laws, 1918, pp. 18, 32–34.)	3	....	Secretary of state, attorney general, and superintendent, ex officio.	....	Meets at State capitol on call of any member; superintendent presides.	Has management of the school funds; audits claims against them; fixes expenses of superintendent's office; has practical administration of school system; may adopt course of study; prescribes rules for county teachers' examinations; prepares outlines for teachers' institutes; decides appeals from county superintendents or State superintendent; may remove county superintendents for cause; has powers of a court to compel attendance of witnesses, take depositions, etc.; approves curriculum of agricultural high schools.
Missouri (Const., Art. XI, sec. 4; school laws, 1917, pp. 132, 143–145; supplement, 1919, pp. 22, 23.)	4	4 years	Governor, secretary of state, attorney general, and superintendent, ex officio.	....	Superintendent is president.	Has general supervision over entire educational interests of the State; directs investment of all moneys received by the State for educational purposes; sees that all moneys are applied as intended by grant, devise, or law; sees that proper disposition is made of school lands; sees that county school funds are expended according to law; prepares outlines of work for colored teachers' institutes; prescribes conditions for approved summer schools; appoints State library board; establishes standards for the establishment and maintenance of part-time schools for employed children.

Digest of laws relating to State boards of education—Continued.

State.	Members.	Term.	Composition.	Compensation.	Organization.	Powers and duties.
Montana (Const., Art. XI, sec. 11; school laws, 1919, pp. 16-29.)	11	Appointive members, 4 years; 2 appointed each year.	Governor, State superintendent, and attorney general, ex officio, and 8 members appointed by the governor with the consent of the senate.	Actual expenses in performance of duties.	Governor is president; superintendent is secretary; majority is a quorum; meets by law quarterly, and on call of president and secretary special meetings may be held at any time and place.	Has general supervision over the State university and various other State educational institutions, electing presidents and faculties, granting diplomas to graduates, and controlling the property and finances. Immediate control in other things vests with the executive boards, composed for each institution of the president and 2 members appointed by the governor, with the advice and consent of the State board of education; prescribes standards of promotion to high schools; grants State and life certificates to teachers.
Nevada (School laws, 1919, pp. 9, 12, 15-20, 54, 62, 63.)	3	....	Governor, superintendent of public instruction, and president of State university, ex officio.	....	Governor is president; superintendent is secretary; meets at call of secretary, but must hold at least 2 meetings a year.	Prescribes courses of study for the public schools and serves with 4 additional persons appointed by governor, as textbook commission; constitutes normal training school board; grants teachers' certificates and diplomas; adopts lists of books for district libraries, except for districts of the first class; appoints 1 deputy superintendent for each supervisory district; prepares plans for rural schoolhouses.
New Hampshire	6	Appointed members, 5 years.	Governor and 5 members appointed by governor.	Actual expenses in performance of duties.	Board elects chairman; commissioner of education is secretary and executive officer.	Has management, supervision, and direction of all public schools; makes rules and regulations for management of its own business; has charge of work of Americanization.
New Jersey (School laws, 1918, pp. 7-10.)	8	8 years; 1 appointed each year.	8 male citizens appointed by the governor; must have been resident of the State 5 years or more immediately preceding appointment; not more than 4 from same political party and not more than 1 from same county.	Necessary expenses.	Elects its president and officers; meets monthly and at such other times and places within the State as necessary.	Controls State normal schools, school for the deaf, and industrial school for colored youth; has general supervision and control of public instruction; approves contracts, plans, and specifications for school buildings; prescribes a uniform and simple system of bookkeeping for use in school districts; prescribes rules for the examination and certification of teachers and rules for holding teacher's institutes; decides appeals from commissioner of education; may withdraw or withhold its approval of secondary schools; fixes nonresident tuition rates when districts affected can not agree; may compel the attendance of witnesses and the production of books, records, etc.; approves institutions in the State before they may confer degrees; apportions 10 per cent reserve of State tax.
New Mexico (Const., Art. XII, sec. 6; school laws, 1919, pp. 7-9, 11, 13.)	7	4 years	Governor and State superintendent, ex officio, and 5 members appointed by the governor with the consent of the senate, 1 of whom shall be a head of a State educational institution, 1 a county superin-	$5 per diem and 10 cents per mile traveled one way in attending meetings.	Governor is president; superintendent is secretary; 4 meetings annually.	Has general control of the public schools; prescribes course of study; adopts uniform textbooks; grants, renews, and revokes teachers' certificates; has general supervision of teachers' institutes and issues course of study for them; issues course of study for industrial education; empowered to adopt a standard of efficiency for commercial courses and to issue certificates of recognition to schools meeting the standard; to issue permits to commercial schools and

			tendent of schools, and 1 a person connected with educational work.		correspondence schools to canvas for students; administers vocational education.
New York.......... Regents of the University of the State of New York (contd.)	12	12 years; 1 elected each year.	The number shall be 3 more than the number of existing judicial districts; each judicial district shall always have 1 regent; no regent shall be a trustee, president, principal, or any other officer of an institution of the university; elected by legislature in joint sessions.	Necessary expenses.	Chancellor and a vice chancellor elected by the regents; regents provide for regular meetings and called meetings may be held; commissioner of education is executive officer; 7 constitute a quorum.	The regents exercise the general management and supervision of all public schools and all the educational work of the State. *Degrees.*—They confer certificates, diplomas, and degrees on persons who satisfactorily meet the requirements prescribed. *Examinations.*—In the secondary institutions regents' examinations furnish the standard of graduation and of admission to colleges. Certificates or diplomas are conferred on students that satisfactorily pass the academic examinations. The regents also supervise the entrance requirements to the professional schools and conduct the professional licensing examinations. *Registration.*—The regents register both domestic and foreign institutions in terms of New York standards, fix the value of degrees, diplomas, and certificates issued by institutions of other States and countries and presented for entrance to schools, colleges, and the professions in New York State. *Incorporation.*—Under such name and with such number of trustees or other managers, and with such powers, privileges, and duties, and subject to such limitations and restrictions in all respect as the regents may prescribe in conformity to law, the regents by an instrument under their seal and recorded in their office incorporate institutions or asssociation for the promotion of science, literature, art, history, or other departments of knowledge or of education in any way, associations of teachers, students, graduates of educational institutions, and other associations whose approved purposes are in whole or in part of educational or cultural value deemed worthy of recognition and encouragement by the university. No institution or association which might be incorporated by the regents may be incorporated under any other general law without their consent. *Extension.*—The regents extend to the people at large increased educational opportunities, facilities, stimulate interest therein, recommend methods, designate suitable teachers and lecturers, conduct examinations and grant credentials, and otherwise organize, aid, and conduct such work. *Visitation.*—The regents or their representatives visit, examine into, and inspect the institutions in the university and require annual reports duly verified from the various institutions of the university. For refusal or continued neglect to make any report required or for violation of any law or any rule of the university, the regents may suspend the charter or any of the rights and privileges of such institution.

Digest of laws relating to State boards of education—Continued.

State.	Members.	Term.	Composition.	Compensation.	Organization.	Powers and duties.
New York—Contd.	......	....	....	....	....	*Departments.*—The regents establish such departments and divisions as they deem useful in the discharge of their duties. The educational and administrative work is performed by 5 departments of the university—higher education, secondary education, elementary education, State library, and science. The work of these departments is distributed among 13 divisions—viz, administration, attendance, educational extension, examinations, history, inspections, law, library school, public records, school libraries, statistics, visual instruction, and vocational schools. *Education building.*—It is occupied exclusively by the university, including the various departments and divisions of the work, together with such other work as the regents may, in their discretion, provide for therein. The building and the offices of the departments are maintained at State expense.
North Carolina...... (Cons. Art. IX, sec. 8; school laws, 1919, pp. 13-14, 75, 80.)	7	....	Governor, lieutenant governor, secretary of state, treasurer, auditor, superintendent of public instruction, and attorney general.	Contingent expenses provided by legislature.	Governor is president; superintendent is secretary; majority is a quorum; meets at such times as a majority elect, but governor may call a meeting at any time.	Controls State permanent school fund ("literary fund"); apportions State school funds; loans money from literary fund to county boards to build or improve schoolhouses; adopts uniform system of textbooks in conjunction with subtextbook commissioners; controls colored normal schools; elects directors of the State normal and industrial college and trustees of the East Carolina Training School; may add subjects to course of study prescribed by law for the public schools; approves establishment of public high schools by county boards.
North Dakota...... (Session laws, 1919, ch. 71.)	5	Appointed members, 6 years.	State superintendent and commissioner of agriculture and labor ex officio and 3 members appointed by the governor.	Appointed members $3,000 each and necessary traveling expenses.	Board elects a president and an executive secretary, the latter not being a member of the board.	General supervision and administration of all State penal, charitable, and educational institutions; general supervision of the public and common schools; appoints a temporary commission to investigate kinds and cost of library and textbooks for use in public schools; appoints a commission to have charge of certification of teachers, standardization of schools, examinations for eighth grade and high school pupils, preparation of course of study for public schools, and such other work as may be assigned by the board.
Oklahoma.......... (Cons., Art. XIII, sec. 5; school laws, 1919, pp. 390-406.)	7	Appointive members, 6 years, 2 appointed every 2 years; may not be removed during term except for cause.	Superintendent of public instruction, and 6 members appointed by the governor, at least 2 of whom shall have had at least 4 years' experience in actual school work, 2 of which must have been in Oklahoma.	$6 a day, traveling expenses and hotel expenses not to exceed $3 a day for appointive members.	Superintendent is president; secretary appointed by president to receive $2,100 per annum.	Controls State educational institutions except State agricultural and mechanical college and district agricultural schools; has general supervision of the public schools; adopts courses of study for common schools; arranges courses of study and adopts textbooks for higher institutions; makes rules regarding the issuance of certificates; prepares examinations for applicants for county and State certificates; examines applicants for State certificates; prepares examinations for graduates of the eighth grade; classifies high schools and accredits them to higher institu-

						tions; outlines courses for reading circles; formulates rules regarding the organization, etc., of commercial and business colleges; is State textbook commission; prepares and submits budget for institutions under its control; approves colleges and universities which grant academic and professional degrees; apportions supplementary aid to weak districts; makes rules for administration.
Oregon............ (School laws, 1919, pp. 6, 19, 140.)	3	....	Governor, secretary of state, and superintendent of public instruction.	....	Superintendent is secretary; meets in January and July.	Prescribes rules for the general government of the public schools; authorizes textbooks adopted by textbook commission; prepares a course of study for grammar-grade schools; prescribes rules fixing standards for high schools receiving money from county high-school fund; indicates at least 60 per cent of the questions in theory and practice used in county examinations; decides appeals made to State superintendent and submitted by him.
Pennsylvania....... (School laws, 1919, pp. 52, 60–61, 99, 121, 164, 184.)	7	Appointive members 6 years, 1 appointed each year.	Superintendent of public instruction, ex officio, and 6 members appointed by the governor with the consent of two-thirds of the senate; 3 of appointive members shall be successful educators of the State.	Necessary expense incurred in the performance of their duties.	Superintendent is president and chief executive officer of board; makes its own by-laws and has such officers it deems necessary.	Controls all real and personal property belonging to the State school fund; reports and recommends to the governor and legislature necessary legislation to make schools efficient; equalizes, through special appropriations or otherwise, the educational advantages of the different parts of the State; inspects and requires reports from schools or institutions wholly or partly supported by the State; encourages and promotes instruction in agriculture, manual training, and household arts; prescribes rules for the sanitary equipment and inspection of school buildings; prepares plans for school buildings; provides for education of certain blind children; makes rules and regulations for management of State normal schools; administers vocational education; makes appointments to State scholarships.
Rhode Island....... (School laws, 1910, pp. 8–11, 25–27, 38, 46, 67, 75; ch. 678, Apr. 25, 1911; ch. 828, Apr. 29, 1912; ch. 839, May 3, 1912; chs. 943, 944, 945, 947, Apr. 29, 1913; ch. 1284, Apr. 23, 1915; ch. 1347, Apr. 14, 1916; ch. 1470, Mar. 28, 1917; ch. 1622, Apr. 17, 1918; ch. 1654, Apr. 19, 1918; ch. 1737, Apr. 23, 1919; ch. 1812, Apr. 24, 1919.)	8	Elective members, 6 years; 2 elected each 2 years.	Governor and lieutenant governor ex officio, and 6 members elected by the legislature for 6 years, 1 member from each county in the State, except Providence County, which has 2 members.	Necessary expenses incurred in the discharge of duties.	Governor is president, commissioner of education is secretary; holds monthly meetings and may hold special meetings on call of president or secretary.	Has general supervision and control of public schools, high schools, normal schools, and normal institutes; appoints State commissioner of education; prepares and furnishes blanks on which reports from all State-aided schools or institutions are required; furnishes registers for private schools and receives reports from them; provides scholarships at Brown University for post graduate work in preparation for teaching; provides for examinations and certification of teachers; administers teachers' pension law; supervises education of blind; apportions money for public libraries, prescribes books for same, and provides for visitation and examination; maintains a system of traveling libraries; apportions State aid for deficient schools; provides supervision for certain towns; appoints to State scholarships at Rhode Island School of Design and Rhode Island College of Pharmacy; serves as State board for vocational education; apportions State aid for vocational education; supervises reeducation and rehabilitation of crippled victims of industry; approves standards for "reading and writing" tests in Americanization and appoints supervisor of Americanization.

Digest of laws relating to State boards of education—Continued.

State.	Members.	Term.	Composition.	Compensation.	Organization.	Powers and duties.
South Carolina (School laws, 1919, pp. 11-14, 25, 63, 69, 77.)	9	4 years	Governor and superintendent of education, ex officio, and 7 members appointed by the governor.	$4 per diem and mileage as provided for members of legislature; may not be paid for more than 20 days.	Governor is president; superintendent is secretary; meets on call of the president or a majority of the members; majority is a quorum.	Is advisory board to superintendent; adopts rules for the government of public schools; prescribes uniform textbooks; determines appeals; prescribes rules for the examination of teachers; prescribes standards of efficiency for teachers' examinations before county boards; grants and may revoke State teachers' certificates; awards scholarships in the institutions supported in whole or in part by the State; appoints two of the three members of county board of education; prescribes courses of study for high schools; constitutes State high-school board; adopts rules governing school libraries and administers State aid; approves private and parochial schools attended by children between the ages of 8 and 14; administers vocational education.
Tennessee (School laws, 1920, pp. 7-10, 80.)	11	Appointive members, 6 years, 3 appointed every 2 years.	Governor, superintendent of public instruction, ex officio, and 9 members appointed by the governor; at least 3 from each grand division of the State.	Necessary expenses and $5 per day while attending meetings or engaged in committee work.	Governor designates chairman; superintendent is secretary.	Has control and management of the State normal schools, fixing course of study, employing teachers and other officers, prescribing entrance requirements and standards for graduation. It prescribes rules for the examination of candidates for county superintendent; classifies high schools and prescribes rules for granting State aid to such schools; regulates the examination and certification of teachers in high schools receiving State aid; adopts rules governing school libraries receiving State aid; apportions special funds for equalizing common schools, consolidation and supervision of rural schools, and supplementing salaries of county superintendents.
Texas (School laws, 1917, pp. 9-18, 92, 94, 96.)	3	....	Governor, secretary of state, and comptroller.	....	Governor is president; superintendent is secretary.	Apportions school funds to counties, cities, towns, and districts; has charge of investment of permanent school fund; may create school districts at eleemosynary institutions; determines appeals from the State superintendent; grants State aid to high schools; administers vocational education, special rural school fund; approves and directs expenditure of funds for State-wide system of free textbooks.
Utah (Laws of Utah, 1917, secs. 4505-4516, 4540-4545, 4576-4582; session laws, 1919; ch. 84, 85, 86, 92, 93.)	9	6 years	Superintendent of public instruction, president of the State University, president of the agricultural college, ex officio, and 6 other persons appointed by the governor with the consent of the senate.	Members not receiving salaries from the State receive $4 per diem, and all members receive actual necessary expenses.	Superintendent is chairman; chairman appoints a secretary from among the members; meets on call of chairman at least 4 times a year; majority is quorum.	Has general control and supervision of public-school system; appoints 5 of 7 members to prescribe course of study for common schools; prescribes course of study for high schools; fixes standards for high schools; grants State diplomas and certificates to teachers; may approve diplomas and certificates from other States; promotes establishment and maintenance of libraries; controls Americanization and health education; is State board for vocational education.

Vermont	5	5 years, 1 appointed each year.	5 members appointed by governor.	$4 per diem and expenses incurred in performance of duties.	Governor designates chairman; holds at least four regular meetings each year.	Supervises and manages public educational system, including State schools of agriculture; supervises expenditure of all State money for administration and teachers; provides for publicity regarding educational conditions; provides for educational gatherings, institutes, summer schools, etc.; cooperates with free public library commission; power to locate and establish a central normal school or school of education.
Virginia. (School laws, 1910.)	8	Those elected by the senate, 4 years; the 2 appointed by the board serve 2 years.	Governor, attorney general, superintendent of public instruction, and 3 experienced educators elected by the senate from a list of eligibles from the faculties of State institutions. The board thus constituted shall associate with itself 2 division superintendents of schools, 1 from a county and 1 from a city; the 2 associate members shall not participate in the appointment of any public-school officials, otherwise their powers are equal with those of other members.	Reasonable expenses to appointive members.	Superintendent is president; majority constitutes a quorum; meets on call of the president or a majority of the members.	Has general administration of public-school system; controls school fund ("literary fund"); divides the State into appropriate school "divisions"; appoints "division" superintendents of schools and fixes the portion of their salaries paid by the State; prescribes the duties of the State superintendent; approves appointment of employees of superintendent's office and determines contingent expenses of such office; makes rules for government of schools; provides for examination of teachers by State board of examiners and for the inspection of schools by inspectors; selects textbooks and other educational appliances; supervises organization of summer normal schools; decides appeals from State superintendents; may amend superintendent's plan of apportionment of State school moneys; may fine, suspend, or remove division superintendents; appoints board of directors of State library; administers teachers' pension law; standardizes high schools and provides for their inspection; controls schools in State reformatories; approves lists of books for traveling libraries; registers higher institutions of learning.
Washington. (School laws, 1909, pp. 12-14, 108, 109, ch. 16, Feb. 18, 1911.)	7	Appointed and elected members hold office for 2 years.	Superintendent of public instruction, president of the university, president of the State college, principal of one of the normal schools elected by the principals of State normal schools, and 3 holders of State life diplomas appointed by the governor, 1 a superintendent of a first-class district, 1 a county superintendent, and 1 a principal of a 4-year high school.	Actual necessary expenses; members not already on salary may receive $5 per day when on special committee work.	Superintendent is president, deputy superintendent is secretary; one meeting annually and necessary special meetings on call of superintendent.	Prescribes rules for the general government of the common schools; prepares outline courses of study for primary, grammar, and high schools; prepares questions for examinations for graduation from grammar schools; examines and accredits secondary schools; outlines high-school extension courses and prescribes examinations; prepares questions to be used by county superintendents in examining teachers; approves entrance requirements at State university, State college, and State normal schools; approves courses of study in normal training in higher institutions; outlines courses of study in physical education for elementary schools, high schools, and courses of study in higher institutions; classifies highschool districts; is State board for vocational education.

Digest of laws relating to State boards of education—Continued.

State.	Members.	Term.	Composition.	Compensation.	Organization.	Powers and duties.
West Virginia (School laws, 1919, pp. 10-17.)	7	Appointive members, 6 years, 1 appointed each year.	Superintendent of free schools ex officio; 6 members appointed by governor, at least 3 of whom are engaged in school work; not more than 3 appointive members from the same political party.	Appointive members of board and advisory council, $1,000 per year and expenses incurred in attendance on meeting.	Board elects president and vice president from its membership; elects a secretary, salary $1,800 per year; State superintendent is executive officer. Board has advisory council on behalf of colored schools composed of 2 members appointed by governor besides supervisor of colored schools.	Makes rules and regulations concerning the standardization and classification of all schools; has general direction over training of teachers; provides minimum standards for courses of study; approves plans for erection of all school buildings; adopts textbooks; employs teachers for the State institutions; regulates expenditure of funds appropriated for school purposes by the State legislature and by the Federal Government.
Wisconsin (Laws, 1917, pp. 787-791; 1919, p. 160.)	10	Governor's appointees, 5 years, 1 appointed each year; other appointive members, 2 years.	Governor and State superintendent ex officio; 5 members appointed by governor; 3 members appointed 1 each by regents of university, regents of normal schools, and State board of vocational education from appointive membership of such boards.	Members other than those receiving salaries form the State or State institutions receive $8 per day not exceeding 60 days in any one year and actual expenses incurred.	Board elects its president; may appoint and fix compensation of secretary and other employes.	Exclusive charge and management of all financial affairs relating to capital account and biennial estimates for the educational activities of the State; examines and studies business methods and management of and expenditure of public funds for common schools, high schools, county training schools, county schools of agriculture and domestic economy, continuation, commercial, industrial and evening schools, day schools for deaf and blind, Stout Institute, mining trade school, normal schools, and university; ascertains financial and business needs of such schools; reports thereon to legislature.
Wyoming (School laws, 1919, pp. 7-12.)	7	Appointed members, 6 years, 2 appointed every 2 years.	State superintendent ex officio and 6 members appointed by him with approval of governor.	Traveling and other necessary expenses.	Board elects chairman; commissioner of education is secretary.	Has general oversight of vocational and other special schools; prescribes standards of courses of study and provides for printing and distribution; provides for grading and standardization of schools; may make rules and regulations for construction of school houses; may make rules and regulations governing location and selection of grounds; prescribes and publishes annually courses of reading; recommends issuance of certificates; publishes lists of approved textbooks.

STATE SUPERINTENDENT OF PUBLIC INSTRUCTION.

Data regarding the title, term, manner of selection, salary, and powers and duties of the State superintendent of public instruction or other chief State school officer are given in the tabular statement on pages 26 to 33.

Title.—Eight different titles are used by the several States in designating the chief State school officer. The most common title is that of "superintendent of public instruction," which is now used in 30 States; next in point of numbers is "commissioner of education," which is now used in 9 States, a gain of 5 States since 1915; the States using that term are Connecticut, Delaware, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. In Alabama and South Carolina the chief State school officer is designated superintendent of education; in Georgia and Maryland, superintendent of schools; in Maine and Missouri, superintendent of public schools; in Louisiana and Mississippi, superintendent of public education; in West Virginia, superintendent of free schools. In a considerable number of States the title is designated in the State constitution and can not easily be changed. The trend, however, seems to be in favor of "commissioner of education," which title came into use in connection with State officers in very recent years and has already been adopted in 9 States.

Term of office.—The terms of office of chief State school officers vary widely in the different States, ranging from 1 year to an indefinite term. In Delaware and Rhode Island, the term is only 1 year; in 14 States, Arizona, Arkansas, Colorado, Georgia, Idaho, Indiana, Kansas, Michigan, Nebraska, North Dakota, South Carolina, South Dakota, Tennessee, and Texas, the term is 2 years; in Maine, 3 years in 24 States, Alabama, California, Florida, Illinois, Iowa, Kent Louisiana, Maryland, Mississippi, Missouri, Montana, Nevad Mexico, North Carolina, Ohio, Oklahoma, Oregon, Pennsy Utah, Virginia, Washington, West Virginia, Wisconsin, and Wy 4 years; in Massachusetts and New Jersey, 5 years; in Minne years; and in Connecticut, New Hampshire, New York, and Ve the term is indefinite, the officer serving at the pleasure of t board.

Manner of selection.—Three methods of selecting the chi school officer are followed: Election by the people, in 34 appointment by the governor, in 6 States; appointment by of education, in 8 States. The changes in methods by States since 1915 are as follows: Iowa, from appointm ernor to election by the people; Delaware, Maryland, Mi New Hampshire, from appointment by governor to appo State board; and Massachusetts, where the State board made an advisory body, from appointment by State board to appointment by governor. The following shows the present method of selection in the various States:

He is elected by the people in Alabama, Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, Oklahoma, Oregon, South Carolina, South Dakota, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

He is appointed by the governor in Maine, Massachusetts, New Jersey, Ohio, Pennsylvania, and Tennessee.

He is appointed by the State board of education in Connecticut, Delaware, Maryland, Minnesota, New Hampshire, New York, Rhode Island, and Vermont.

The following statement regarding the selection of the chief State school officer is reprinted from the bulletin of this bureau, 1915, No. 5:

> In nearly all of the States the office of State superintendent of public instruction was created as a political office; in the majority it has remained a political office; it is difficult to change it. There is a diversity of opinion among educational leaders as to how, in the interest of greater efficiency, he ought to be appointed, but the majority seem to favor his selection by a nonpartisan State board of education. Some of the serious disadvantages of his election by popular vote are reasonably clear:
>
> (*a*) This method of appointment limits the field from which it selects the man for the position; he must be a citizen of the given State. In States where the superintendent is appointed by the State board of education, and in some States where he is appointed by the governor, he may be selected from the country at large. The city board of education selects its superintendent of schools from the country at large. Trustees of colleges and universities, even of State universities, select executive heads of these institutions from the country at large. Boards of directors in control of large business interests select their executive officers from the country at large. Such freedom of selection is clearly in the interest of better service.
>
> (*b*) Where the State superintendent is elected by popular vote the salary is fixed beforehand by law; the salary can not be adjusted to fit the man desired, but a man must be found to fit the salary. It is clearly in the interest of better service that city school boards, trustees of colleges and universities, and boards of business directors have authority to adjust the salary of executive officers to the needs and effectiveness of the service.
>
> (*c*) Where the State superintendent is selected by popular vote the term of office is short, two to four years, and reappointment is uncertain. The superintendent can not count on winning reappointment by rendering good service. Lack of continuity in the service, lack of basis for making and working out far-reaching plans, is a serious handicap to the superintendent, however capable.
>
> (*d*) This method of appointment makes the office a political one and subjects it to all the fluctuations of party and factional politics. Under these conditions the position is not attractive; no one can look to it as a career.
>
> These serious objections to the selection of the State superintendent by popular vote hold true in part at least when the appointment is left to the governor. In a few States the governor is authorized to select the State superintendent from within or without the State. In eight States, as previously mentioned, the State superintendent is appointed by the State board and is the executive officer of the board, performing such

duties as directed by it. If the State board is to be made responsible for the State's educational business, it would seem that it should have the selection of its own executive officer; it should be free to select him from the country at large; it should have power to determine his compensation, and should keep him at his post as long as he is effective.

Attention is called to the situation in two States, Idaho and Wyoming, each of which has a commissioner of education appointed by the State board in addition to a superintendent of public instruction elected by the people. In each of these States certain functions in regard to educational policies and management are assigned to the commissioner of education. In Idaho the commissioner receives a salary of $6,000 per annum, and in Wyoming he receives $3,000, the same amount that is paid the State superintendent.

Powers and duties.—In practically all the States having boards of education, the chief State school officer is executive officer of the board, whether appointed by the board or selected otherwise. As such executive officer he submits to the board recommendations regarding the administration of the school system and carries out the policies of the board. In States not having boards he is the sole executive officer of the State school system. The powers and duties of the superintendent in each State are summarized in the following pages.

Digest of laws relating to chief State school officer.

State, and title of officer.	Term of office in years.	Manner of selection.	Salary.	Powers and duties.
Alabama............ State superintendent of education..	4	By vote of the people.	$5,000	Carries into effect the educational policies of the State board of education; apportions school funds; interprets school laws; decides controversies; calls and conducts educational conferences; receives reports from and examines expenditures, business methods, and accounts of boards of education; prepares rules for construction of school buildings and for teachers' certificates; prepares minimum courses of study for elementary schools, high schools, normal schools, and college courses for training of teachers; prepares rules for the protection of the health, physical welfare, and physical inspection of school children; prepares rules for grading and standardizing elementary and high schools and minimum requirements for issuance of certificates and diplomas in such schools; inspects high schools; prepares uniform series of blanks and forms for public and private schools which shall conform as nearly as may be to the forms and blanks recommended by the United States Bureau of Education.
Arizona............ Superintendent of public instruction.	2	.....do........	3,300	Is a member and secretary of State board of education; is chairman of State board of examiners; superintends the public schools; under supervision of State board apportions school funds to counties; prepares and distributes course of study prescribed by State board; publishes and distributes pamphlets regarding the observance of special days; prepares and furnishes report blanks; makes a report to governor; has school laws printed and supplies them to school officers and libraries; holds annual meetings of county superintendents.
Arkansas............ State superintendent of public instruction.	2	.....do........	2,500	Is member and chairman of State board of education; is general executive officer of the State board; has general supervision of the public schools; prepares graded course of study; apportions school funds; furnishes questions to county examiners of teachers; issues State teaching certificates under supervision of State board; makes annual report to governor; publishes school laws; prescribes uniform system of keeping school accounts; outlines county institute work.
California............ Superintendent of public instruction.	4	.....do........	5,000	Is secretary and executive officer of State board of education; is regent of University of California, trustee of each State normal school, trustee of California Polytechnic School; has general supervision of the schools of the State; apportions State school funds; prepares and furnishes blanks and forms for making uniform reports; visits normal schools, the several orphan asylums to which State appropriations are made, and public schools, and inquires into their condition; may hold annual convention of county and city superintendents; reports biennially to governor; has school laws printed and furnishes copies to officers and libraries; enforces use of State textbooks; distributes textbooks; cancels permits to work.
Colorado............ Superintendent of public instruction.	2	.....do........	3,000	Is member and president of State board of education; has general supervision of public schools; apportions school funds to counties; has supervision of county superintendents; has school laws printed in pamphlet form; decides all points regarding the construction of the school laws; prepares questions for use of county superintendents in examining teachers; furnishes blanks and registers to school officers for making reports; reports to governor with suggestions; visits schools in counties if practicable; prepares and furnishes test cards for the physical examination of pupils; apportions normal institute fund; is member and president of State board of examiners; is member of board of trustees of State normal school; prepares test charts for physical examination.
Connecticut.......... Commissioner of education.	(1)	Appointed by State board of education.	9,000	Is executive officer of the State board of education and performs such duties as State board directs; determines whether districts are conducting school according to law; reports to the State comptroller the list of towns and districts forfeiting State aid for failure to comply with the law and the amount of forfeitures; furnishes blanks and registers for returns from private schools; draws order for school-library money.
Delaware............ State commissioner of education.	1	Appointed by State board of education.	5,000	Is secretary and executive officer of the State board of education; performs such duties as the board may direct; keeps record of official acts of State board and conducts its correspondence; prepares and publishes school laws; audits accounts of school officers; directs school census; prepares measures for approval and adoption by State board; approves all plans, sites, and contracts for new buildings.

Florida. State superintendent of public instruction.	4	By vote of the people.	3,600	Is member and secretary of State board of education; executive officer of State board for vocational education; has oversight of all matters pertaining to public schools and to school buildings and grounds; apportions State school funds to counties; has printed and distributes school laws to school officers and teachers; decides appeals or refers them to board of education; holds meetings of county superintendents; holds teachers' institutes and employs instructors for them; prepares questions for county examinations; holds examinations for and issues State certificates; may grant life certificates; preserves certified copies of lists of persons paying poll taxes; nominates persons to fill vacancies on county boards; nominates school inspectors and 3 members of examining committee.
Georgia. State superintendent of schools.	2	.....do........	4,500	Is member, secretary, and chief executive officer of State board of education; member of State board for vocational education, State geological board, State board of health, boards of eleemosynary, corrective, and educational institutions to which public funds are appropriated, and illiteracy commission; apportions public-school funds; appoints with consent of board three State supervisors; appoints an expert accountant to audit books of school officers; institutes suits to recover misapplied funds; prepares blanks for reports from subordinate school officers; may suspend a county superintendent for cause; visits all counties as far as practicable; makes annual report; organizes county institutes.
Idaho[2]. Superintendent of public instruction.	2	.....do........	2,400	Is member and executive officer of State board of education; executive officer of State board for vocational education; member State library commission; superintends generally the public schools; apportions State school funds; holds conventions of county and city superintendents and district principals; prepares and furnishes necessary blanks to officers and teachers; has school laws printed and furnishes them to school officers and libraries; makes biennial report to governor; visits all counties if practicable; is member of summer normal school commission and visits such schools annually; prepares questions for examination of teachers.
Illinois. State superintendent of public instruction.	4	.....do........	7,500	Has general supervision of public schools; advises county superintendents as to conduct of the schools, construction of schoolhouses, etc.; designates statistics to be reported to county superintendents and may require reports from such superintendents; is legal adviser of school officers; hears and determines controversies; grants State certificates; may remit forfeited school funds to districts; requires auditor to withhold funds from counties until necessary reports are made; requires county superintendents to withhold funds from delinquent districts; visits charitable institutions of an educational nature; is member and secretary of normal school board; member of board of trustees of State university; member and president of board of trustees of State teachers' pension and retirement fund; member and chairman of State examining board; member and chief executive officer of State board for vocational education.
Indiana. Superintendent of public instruction.	2	.....do........	5,000	Is member and president of State board of education; has general supervision of the public schools; visits each county at least once during his term to examine auditor's books; has supervision of the school funds with special reference to their safe investment; may require reports from school officers and for such purpose furnishes blanks; prescribes forms of bookkeeping; has school laws printed; interprets school laws to school officers; indorses approved certificates issued in other States; appoints a deputy superintendent in charge of industrial education.
Iowa. Superintendent of public instruction.	4	.....do........	4,000	Has general supervision and control over all public schools; ascertains needs of schools and suggests needed changes; classifies the various schools and formulates courses of study; promotes vocational education; prescribes reports to be made by officers and teachers and prepares forms therefor; reports annually school census to State auditor; prepares plans and specifications for schoolhouses; provides for county teachers' institutes; prepares questions for applicants to teach and for eighth-grade examinations; has school laws published; hears and determines appeals; designates training schools for rural teachers.
Kansas. Superintendent of public instruction.	2	.....do........	3,000	Is member of State board of education; has general supervision of the public schools; distributes State school funds to counties; publishes school laws and distributes to persons entitled to receive them; decides controversies submitted through county superintendents; prescribes and furnishes blank forms; visits each county of the State at least once in 2 years; is member of textbook commission which is authorized to prepare and publish textbooks to be sold to schools at cost; files and preserves reports made to him; reports biennially to governor.
Kentucky. Superintendent of public instruction.	4	.....do........	4,000	Is member and chairman of State board of education; is member of State board of examiners; apportions State school funds; inspects fiscal affairs and conduct of the offices of all school officials who handle public-school money and sees that all laws and regulations are enforced; visits and inspects all schools if practicable; prepares blanks, etc., for reports and furnishes them to school officers; collects and publishes general information in his biennial report regarding institutions for deaf, dumb, blind, and feeble-minded; edits school laws biennially and publishes them with instructions, etc.; on request hears and determines appeals.

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[1] Indefinite.

[2] Idaho has also a "State commissioner of education" appointed by the State board of education, at a salary of $6,000 per year, who acts as an adviser to the board on educational policies.

Digest of laws relating to chief State school officer—Continued.

State, and title of officer.	Term of office in years.	Manner of selection.	Salary.	Powers and duties.
Louisiana............ Superintendent of public education.	4	By vote of the people.	$5,000	Is member and secretary of State board of education; is ex officio a member of each of the boards of trustees of educational institutions controlled by the State; has general supervision of parish (county) school boards and of all elementary, high, and normal schools; visits parishes as often as practicable; makes biennial reports with recommendations; reports subordinate officers to State board of education for neglect of duty, misuse of school funds, etc.
Maine............... Superintendent of public schools.	3	Appointed by the governor.	4,600	Has general supervision over public schools and advises and directs town committees and superintendents; ascertains number of children 5 to 21 years old to be used as basis of distribution of school funds; prescribes studies to be taught in the common schools, but town committees may prescribe additional studies; prepares and furnishes blanks, etc., for making reports to his office and designates facts to be reported; holds annual conferences for the instruction of superintendents; has school laws printed and distributed to school officers; prescribes examinations for teachers and issues State certificates; keeps list of approved candidates in his office; makes rules governing administration of teachers pension laws; holds summer training schools for teachers; classifies high schools and causes State-aided schools to be inspected; is member of board of trustees of normal schools; is chairman of State board for vocational education; provides special courses of study for physical education and directs a special summer school for training rural helping teachers; approves common school and secondary school equalization funds; furnishes blanks for tests of sight and hearing.
Maryland............ State superintendent of schools.	4	Appointed by State board of education.	8,000	Is executive officer and professional adviser of State board of education; performs such duties as directed by board; nominates all his assistants; interprets school laws; decides all questions pertaining to proper administration of schools; issues teachers' certificates; has veto power over county boards' action in appointment of county superintendents, supervisors, and attendance officers; passes upon plans for construction of school buildings; has veto power in selection and sale of school sites.
Massachusetts........ Commissioner of education.	5	Appointed by governor.	7,500	Is the executive and administrative head of the department of education and shall organize it in divisions and supervise the same; has charge of the administration and enforcement of all laws, rules, and regulations which it is the duty of the department to administer and enforce; has supervision of all educational work supported in whole or in part by the State; visits different parts of the State to assist educational work and diffuse information; publishes and distributes matter for the promotion of public-school education; conducts teachers' institutes; collects information for annual report of board; is one of commissioners to invest and manage State school fund; is member of State teachers' retirement board; trustee of Massachusetts Agricultural College and of textile schools, and chairman of advisory board of education.
Michigan............. Superintendent of public instruction.	2	By vote of the people.	4,000	Is member and secretary of State board of education, is member of other boards having control of State educational institutions, with the right to speak but not to vote; has general supervision of public instruction, including State institutions; apportions primary school interest fund; prepares and has printed a course of study for district schools except city districts; directs supervision of county normal training classes; requires board of education to observe school laws; when necessary, examines school district accounts and may require report; requires districts to conduct schools for term required by law; fixes time and place and appoints instructors for State teachers' institute and for county institutes; removes for cause any member of a school board except in city school districts; prepares rules for township and district libraries; prescribes form for taking school census; prepares questions for examination of teachers; hears and determines appeals; approves schools for accredited list; grants permission to districts to establish schools for the deaf; approves courses of study for rural high schools; approves teachers and courses of study of county schools of agriculture; approves plans and specifications for schoolhouses; has authority to condemn schoolhouses; approves plans for installing heating systems in schoolhouses; is executive officer of the vocational education board.
Minnesota............ Commissioner of education.	6	Appointed by the State board of education.	5,000	Has general supervision of public schools; apportions school funds to schools entitled to State aid; meets county and other superintendents for discussion of educational matters; prepares and distributes blanks, etc., for reports; enforces textbook law; provides for teachers' institutes in the several counties; conducts examinations for teachers and issues all certificates; indorses normal-school certificates to teach and may issue special certificates for music, drawing,

				etc.; hears and determines appeals; enforces a uniform system of accounts and reports; examines and approves plans and specifications for schoolhouses; is member of State normal-school board; member of board of regents of State university.
Mississippi. Superintendent of public education.	4	By vote of the people.	4,500	Is member and president of State board of education; has general supervision of the public schools; apportions State school fund to counties and separate districts; prepares questions for county teachers' examinations; visits and inspects county agricultural high schools and reports thereon to board of education; is member of board of trustees of higher educational institutions; is member of State textbook commission.
Missouri. Superintendent of public schools.	4	....do....	3,000	Is member and president of State board of education; has supervision of school funds; apportions school funds to counties; requires copies of records and such other information from county and district officers as he may deem important; prepares and furnishes blanks, etc., for reports; has school laws printed and distributed; confers with and advises school officers; visits and inspects schools; attends and assists in teachers' meetings; grants State teachers' certificates; visits and inspects high schools and publishes classified list; prescribes minimum course of study for each class; fixes time and place of county superintendents' convention; furnishes to county superintendents a list of publishers who have complied with textbook law; designates first-class high schools in which teachers' training courses may be offered; receives reports from State educational institutions; controls distribution of State aid to high schools and to rural schools; is executive officer of board for vocational education.
Montana. Superintendent of public instruction.	4	....do....	3,600	Is member and secretary of State board of education; has general supervision of the public schools; apportions State school fund to counties; prepares courses of study for elementary and high schools and prescribes to what extent they shall be used; prepares and furnishes to school officers blanks, etc.; prescribes rules for holding teachers' institutes and summer schools; prepares list of instructors and attends and assists at such institutes; advises county superintendents; furnishes copies of school laws; hears and determines appeals; prepares questions for county teachers' examinations; may grant temporary State certificates; prepares list of books for school libraries.
Nebraska. Superintendent of public instruction.	2	....do....	2,000	Has general supervision of the public schools; apportions State school funds; has supervision of State aid to weak districts; has supervision of State-aided high schools, designating those to give courses in agriculture, manual training, and home economics, also those to conduct teacher-training courses; decides disputed points in school law; prescribes forms for reports and makes rules for all proceedings under the school laws; organizes and attends institutes; organizes and manages junior normals; issues State certificates and prepares questions for all teachers' examinations, both county and State, grades the answer papers and makes rules for the conduct of such examinations; approves city school certificates; furnishes approved price lists of textbooks to school districts; is member of State normal school board, State library commission, State dental board, and State board of embalmers; is secretary of State board for vocational education.
Nevada. Superintendent of public instruction.	4	....do....	3,600	Is member and secretary of State board of education; apportions State school fund; apportions county school funds to districts; visits counties at least once in each year to conduct institutes, visits schools, etc.; prescribes rules for making reports and furnishes blanks, etc.; has school laws printed and furnished to school officers; holds State teachers' institutes biennially and district institutes in other years; may call county institutes; calls meetings of State board of education; nominates deputy superintendents to State board; requires reports from deputy superintendents; is director of orphans' home; appoints census marshals in new districts; fills vacancies on county boards for unexpired terms; makes arrangements for care of deaf, dumb, and blind; decides appeals from teachers and school boards; determines county school tax when county board fails so to do.
New Hampshire. Commissioner of education.	(1)	Appointed by State board of education.	5,000	Is secretary and chief executive officer of State board of education; prescribes form of school registers and blanks for reports; compiles and publishes school laws; visits as many towns as practicable; organizes and holds at least one teachers' institute in each county annually and may employ instructors; assists school boards and superintendents in the introduction and development of vocational training; inspects and rates high schools; nominates inspectors of child labor; has authority to enforce attendance laws and laws relating to child labor; examines teachers and issues certificates; is regent of State board of medical examiners; approves hospital training schools.

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[1] Indefinite.

State, and title of officer.	Term of office in years.	Manner of selection.	Salary.	Powers and duties.
New Jersey.......... Commissioner of **education.**	5	Appointed by the governor.	$10,000	Under State board of education has general supervision of public schools; designates a clerk to serve as secretary of State board of education; appoints four assistant commissioners; appoints inspector of buildings and inspector of accounts; apportions State funds to counties; may prescribe courses of study for elementary and high schools; prescribes methods of ascertaining what children are below normal; directs county collector to withhold State funds from delinquent districts; is one of the trustees of the school fund; is a member of all boards of examiners; appoints county superintendents and helping teachers; holds annual meetings of city and county superintendents; instructs city and county superintendents as to their duties in conduct of schools, construction of schoolhouses, etc.; directs withholding salary of teacher not complying with law; requires reports from institutions receiving State aid; prepares blanks for making all reports and conducting proceedings under school laws; causes school laws to be printed; decides controversies subject to appeal to board of education; loans plans for schoolhouses to districts and may require abandonment of unfit building; is member of public library commission and trustee of school fund.
New Mexico.......... **Superintendent** of public instruction.	4	By vote of the **people.**	3,000	Is member and secretary of State board of education, has general supervision of public education; apportions current school fund to counties; distributes State-aid fund to weak districts; has supervision over records and accounts of school boards; may suspend county superintendent for neglect of duty; visits counties as often as practicable to hold teachers' meetings, advise with county superintendents, etc.; appoints State director of industrial education; has printed and distributes blanks for reports; receives reports from school officers; has school laws printed; hears and decides controversies; enforces law relating to building of schoolhouses.
New York........... **President** of the **university and commissioner** of **education.**	(3)	Elected by the regents.	10,000	As president of the university, in addition to such other duties and functions as may otherwise be devolved upon him with the power and duty of general supervision over all educational work and activities in this State, it is his duty also to devote himself to educational research, to the study of the educational work of the systems of other jurisdictions and, with the approval of the regents, to introduce and originate so far as possible better methods of education and especially to endeavor in every feasible way to bring about the improved development and greater usefulness of the common schools of the State. He may attend all meetings of the board and its committees, submit matters for their consideration and participate in their discussion. The commissioner of education is alone eligible for election to the office of president. As commissioner of education, he is the chief executive officer of the State system of education and of the university. In case of vacancy the chancellor succeeds to and has the power of the commissioner, or if his office be vacant the succession devolves upon the vice chancellor or the senior regent or a deputy appointed by the same if he be at the same time a university officer or regent. The general powers and duties of the commissioner prescribed by the law comprise: Enforcement of all general and special laws relating to the educational system of the State and the execution of all educational policies determined by the regents; the general supervision over all schools and institutions, examinations, and inspections; general supervision of industrial schools, trade schools, and schools of agriculture, mechanic arts and home making; the general supervision of the State normal schools; membership on the boards of trustees of Cornell University, of Syracuse State College of Forestry, of Cobleskill Agricultural School, of the State College for Teachers; responsibility for the safe-keeping, proper use of the seal, the books, the records of the university and for the proper administration and discipline of the various offices and divisions of the department; the annulment of teachers' certificates and normal diplomas; the preparation and preservation of teachers' records; the preparation of registers, blanks, forms and regulations affecting the common schools and their officers; the administration of oaths and affidavits relating to the duties of his office or the schools of the State; authority to furnish visual instruction through the schools, institutions, and organizations of the university; authority to organize and maintain courses in schools to train treachers who shall give instruction to illiterates, and to divide the State into zones and appoint directors and teachers for the education of illiterates and non-English speaking persons; and the execution of such other powers and duties as he is charged with by the regents.

North Carolina....... Superintendent of public instruction.	4	By vote of the people.	4,000	Is member and secretary of State board of education; signs all orders paid by State treasurer for school purposes; publishes school laws and sees to their enforcement; instructs school officers, who must obey his instructions and interpretation of the school law; has supervision of loaning of literary fund for construction of schoolhouses; prepares blanks, etc., for reports; prescribes courses of study for public high schools; is secretary of textbook commission; is chairman of State board of examiners; is member of boards of trustees of certain State educational institutions; makes rules for rural libraries and furnishes lists of books; is trustee of State library.
North Dakota........ Superintendent of public instruction.	2	.....do.........	3,000	Is member of State board of administration; chairman of State school commission; chairman of State educational commission; furnishes blanks for records and reports; holds meetings of county superintendents; has school laws printed and distributed to school officers; decides appeals; keeps sample copies and price lists of books furnished by publishers to districts; appoints inspector of State graded schools and high-school inspector; approves plans for schoolhouses; inspects agricultural and training schools; is member of board of university and school lands; is member of board of trustees of teachers' retirement fund; approves books for district libraries.
Ohio............... Superintendent of public instruction.	4	Appointed by the governor.	4,000	Has general supervision of public education; has supervision of State school funds; requires reports from school officers and prescribes forms; makes an annual statistical report to the governor; has school laws printed and distributes to school officers; requires reports from private schools; on application by 3 taxpayers, appoints an examiner to audit a school district's account; submits abstract of enumeration of youth to State auditor for apportionment of school fund; requires reports of high schools and grades such schools; furnishes to districts names of publishers of textbooks with prices, etc.; inspects day schools for deaf, blind, and crippled; prepares questions for examinations for county teachers' certificates; evaluates credits required to take local examinations; approves colleges granting degrees; appoints State board of examiners and countersigns all certificates issued by them; appoints a sufficient number of assistants; appoints high-school inspectors; approves applications for State aid and rules of county examiners; standardizes the elementary schools of the State, furnishing suitable placards for same; issues provisional certificates to graduates of approved teacher-training courses, and renews all professional (that is, 5 and 8 year) certificates; establishes teacher-training courses in high schools and approves directors of same; receives reports of city, county, and State school examiners; is member, secretary, and administrative officer of State board of education which administers vocational education.
Oklahoma........... Superintendent of public instruction.	4	By vote of the people.	2,500	Is member and president of State board of education; has general supervision of educational interests; apportions State school fund to counties; publishes school laws; hears and decides controversies; furnishes blanks, etc., for reports; preserves records and school documents; appoints State school inspector; is member of commission on agricultural and industrial education; grants life certificates to graduates of State university on 24 semester hours in education; grants 2-year certificates on 1 year's attendance in State university; is head of department of high-school inspection and appoints 3 inspectors.
Oregon.............. Superintendent of public instruction.	4	.....do.........	3,000	Is member and secretary of State board of education; has general supervision of county and district school officers and of the public schools; prepares questions for examinations of graduates of eighth grade; prescribes 2 years of course of study for high schools; visits, if practicable, every county annually; attends county institutes and assists in their organization and development; keeps statistics of schools; prepares blanks, etc., for uniform reports; compiles and annotates school laws; decides appeals or may submit them to State board; issues letters and circulars to school officers relative to the conduct of the schools; holds annual State teachers' association; appoints a board of 9 examiners to prepare questions for State examinations of teachers; appoints professional teachers to grade papers; issues State certificates; is member of State library commission; classifies correspondence schools; prepares reading-circle course and rules.
Pennsylvania........ Superintendent of public instruction.	4	Appointed by the governor.	12,000	Is member, president, and executive officer of State board of education; has general supervision of public schools; apportions State appropriation; signs order of payment of State school funds to district; prescribes minimum course of study for public schools; issues commissions to superintendents and assistant superintendents and fills vacancies in the county superintendencies; prepares blanks for reports from school officers; interprets school laws and advises relative to their enforcement; classifies high schools and prescribes rules for admission of pupils; may condemn school buildings unfit for use; issues State teachers' certificates and indorses normal school diplomas; appoints board of normal school examiners; holds meeting of normal school principals to make course of study.

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[3] During the pleasure of the regents.

Digest of laws relating to chief State school officer—Continued.

State, and title of officer.	Term of office in years.	Manner of selection.	Salary.	Powers and duties
Rhode Island........ Commissioner of education.	1	Elected by State board of education.	$6,000	Is secretary of State board of education; apportions State appropriation for public schools; hears and decides appeals and prescribes rules for making appeals; visits towns to inspect schools; assists in securing uniformity of textbooks in all towns; prepares programs for Grand Army flag day and for Rhode Island independence day, arbor, and other special days; approves unions of towns for employment of superintendents and draws order on treasurer for one-half of salaries; approves consolidation of schools; is one of managers of Rhode Island State College; holds teachers' institutes; is member of board of trustees of State normal school.
South Carolina....... Superintendent of education.	2	By vote of the people.	2,500	Is member and secretary of State board of education; has general supervision of public schools; visits counties to inspect schools and diffuse information; with advice of State board, secures uniformity of textbooks; prepares and furnishes registers, forms, etc., to county superintendents for making reports; has school laws printed; receives reports from State institutions of higher learning; is member of board of trustees of institute for deaf, dumb, and blind; is member of board of trustees of State university and State college for women.
South Dakota........ Superintendent of public instruction.	2	.....do........	2,400	Has general supervision of all public and private schools and of city and county superintendents; meets county superintendents in convention to secure uniform administration of the school laws; inspects and accredits high schools; renders opinions regarding school laws; furnishes blanks for reports of county and city superintendents; attends teachers' institutes and prescribes rules for holding county normal institutes and summer schools for teachers; approves list of institute conductors; holds examinations of teachers and issues certificates; prepares questions for county examinations; is member of teachers' reading circle board of managers; is president of free library commission, State board of health, State child welfare commission; has charge of Americanization, State aid for rural and consolidated schools; establishment of normal training departments and State aid in high schools; approves courses in normal schools, colleges, and universities in State leading to teachers' certificates.
Tennessee............ Superintendent of public instruction.	2	Appointed by the governor.	3,600	Is member and secretary of State board of education; is chairman of State board of examiners; is member of all other educational bodies or associations; is treasurer of the Peabody Normal College fund; collects and disseminates statistical and other information regarding the public shcools; makes inspection of public schools; holds county conferences of teachers; prepares and distributes blanks for reports of officers and teachers; has school laws printed and distributed and sees that they are carried out; may appoint persons in each county to examine schools and report thereon; requires county superintendents to report annually; reports scholastic population to State comptroller annually; has general supervision of county high schools; is member of State textbook commission; is member of free library commission; supervises work of the director of library extension.
Texas............... State superintendent of public instruction.	2	By vote of the people.	4,000	Is secretary of State board of education; apportions State school funds; has general supervision of public schools and of the administration of the school laws; hears and determines appeals from subordinate officers, but his decisions may be reversed by State board; prescribes forms for reports; approves accounts to be paid from school fund by State treasurer; issues instructions to school officers, which instructions are binding; has school laws printed and distributed; requires reports from county, city, and district officers; appoints State board of teachers' examiners and issues State certificates on their recommendation; prepares questions for county examinations; is member of State textbook commission; supervises summer normal institutes; has supervision of school census; is administrative officer in charge of system of distribution of textbooks; is executive officer of State board for vocational education; has charge of administration of $2,000,000 special fund for rural schools.
Utah................ Superintendent of public instruction.	4	.....do.........	4,000	Is member and chairman of State board of education; has general supervision of public instruction; apportions State school funds; requires reports from counties and cities and withholds apportionment from those not reporting; prepares and furnishes forms, blanks, etc., for making reports; visits each county in the State at least once a year; may examine officers' accounts relative to school funds; holds annual conventions of county and city superintendents; with principal of State normal school and county superintendent constitutes governing board of teachers' institutes; is member of State textbook commission; is member of commission to fix course of study; is member of juvenile court commission.

Vermont Commissioner of education.	[1]	Elected by State board of education.	6,000	Is executive officer of the State board of education; he shall, at such times and in such detail as said board directs, make reports to said board concerning the public educational system together with such recommendations as he deems proper for the promotion of the educational interests of the State.
Virginia Superintendent of public instruction.	4	By vote of the people.	4,500	Is member and president of the State board of education; is member of boards of visitors of State educational institutions; sees to execution of school laws; interprets school laws to school officials and his decisions are final unless reversed by State board; furnishes blanks and requires reports from division superintendents; may appoint persons to inspect schools in counties; makes inspection throughout the State; prepares scheme for apportioning State school funds; prescribes forms of contracts with teachers; signs warrants of State board; issues teachers' certificates.
Washington Superintendent of public instruction.	4	do	3,000	Is member and president of State board of education; has general supervision of the public schools; apportions State school funds to counties; has blanks, etc., printed for reports and for the administration of the school laws; attends educational meetings and visits counties; has school laws printed and distributed; hears and determines appeals; holds annual conventions of county superintendents; requires annual reports from educational institutions and county superintendents; keeps directory of regents and faculties of State educational institutions and of all teachers receiving certificates; issues State certificates; prepares a State manual; is member of board of visitors of State College; is member of commission on community welfare; is member of trustees of teachers' retirement fund; is chief executive officer of State board for vocational education.
West Virginia Superintendent of free schools.	4	do	$5,000	Shall have general supervision of all schools; is chief executive officer of the State board of education and member of the board of the school fund; shall have printed and provide for the distribution of blank forms for the carry-on of school work; may institute proceedings against violators of the school laws; shall have authority to call conferences of county, district and city superintendents; shall give interpretations of the school law and the rules of the State board; shall have prepared and published manuals of courses of study, school library lists, and such other bulletins or pamphlets as the needs of the school system demand; shall publish a biennial report; appoint assistants.
Wisconsin Superintendent of public instruction.	4	do	5,000	Has general supervision of the public schools; apportions school-fund income; attends educational meetings and makes investigation of educational systems and the condition of the public schools and disseminates educational information; prepares course of study for public schools; furnishes blanks for reports and requires reports from school officers; publishes school laws and hears and determines appeals; exercises general supervision over county schools of agriculture, manual training schools, county normal schools, and schools for the deaf; formulates course of study for such schools; holds annual county superintendents' convention; issues State teachers' certificates; makes regulations for the management of township and district libraries; is member of board of regents of the State university; is member of board of regents of normal schools and board of trustees of teachers' retirement fund.
Wyoming Superintendent of public instruction.[4]	4	do	3,000	Has general supervision of the public schools; makes rules and regulations for carrying school law into effect; explains law; decides disputes; furnishes contracts to publishers for sale of textbooks; advises regarding courses of study in State Normal School; may revoke certificates; arranges time, place, and manner of holding examinations; issues certificates on recommendation of State board of education.

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[1] Indefinite.

[4] Wyoming has also a commissioner of education elected by the State board of education who executes the educational policies of the board under general supervision and direction of the State superintendent. The salary of the commissioner is $3,000 per annum.

STAFFS OF STATE DEPARTMENTS OF EDUCATION.

Up to a comparatively recent date State departments of education were small organizations devoting themselves almost entirely to routine, clerical, and statistical work, the staff consisting usually of the State superintendent and a very few clerks. Considerable enlargement of these departments has been made in most of the States in recent years. This is due to changing conditions in education whereby the duties of the State departments have been enlarged greatly, the need of field workers to assist local communities and school officers in solving educational problems, the enactment of the Federal vocational education law, compulsory education, provision for physical education, Americanization, teacher-placement, pensions, etc. The growth of State departments in the South may be attributed almost entirely to two factors: The addition of field workers in rural and secondary education through help furnished by the General Education Board and the addition of directors and supervisors of vocational education due to the enactment of the Smith-Hughes law.

The number of persons necessary to perform efficiently the work of a State department depends largely upon the size of the State, the nature and size of the population, and the diversity of its educational interests. For instance, the New York State Department of Education, which has under its jurisdiction the State museum, the State library, the State library school, higher educational institutions, and the care and upkeep of the large educational building, naturally requires a much larger staff than do the State departments of other States.

This question of the size of a State department was discussed by State Supt. C. P. Cary, of Wisconsin, in February, 1920, at the meeting of the Department of Superintendence of the National Education Association. He stated [2] that in a State the size of Wisconsin or Indiana a State department can reach a high degree of efficiency with a force of about 40 persons, including stenographers and clerks, but not including museum directors, attendance officers, examiners for teachers' licenses and the like, and that of the 40 persons about a dozen should be stenographers and clerks. Of the remainder there should be "at least one man to look after the general correspondence, one to look after appeal cases and questions of law, a statistician with enough training and experience to interpret educational statistics, and a first assistant. This would leave approximately 25 persons who would spend a large share of their time (at least three-fourths during the period schools are in session) in field work." The

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[2] School and Society, Mar. 29, 1920, p. 341.

			tendent of schools, and 1 a person connected with educational work.			correspondence schools to canvas for students; administers vocational education.
New York.......... **Regents of the University of the State of New York (contd.)**	**12**	**12 years; 1 elected each year.**	The number shall be 3 more than the number of existing judicial districts; each **judicial district shall always have 1 regent; no regent shall be a trustee, president, principal, or any other officer of an institution of the university; elected by legislature in joint sessions.**	**Necessary expenses.**	**Chancellor and a vice chancellor elected by** the regents; regents provide for regular meetings and called meetings may be held; commissioner of education is executive officer; 7 constitute a quorum.	The regents exercise the general management and supervision of all public schools and all the educational work of the State. *Degrees.*—They confer certificates, diplomas, and degrees on persons who satisfactorily meet the requirements prescribed. *Examinations.*—In the secondary institutions regents' examinations furnish the standard of graduation and of admission to colleges. Certificates or diplomas are conferred on students that satisfactorily pass the academic examinations. The regents also supervise the entrance requirements to the professional schools and conduct the professional licensing examinations. *Registration.*—The regents register both domestic and foreign institutions in terms of New York standards, fix the value of degrees, diplomas, and certificates issued by institutions of other States and countries and presented for entrance to schools, colleges, and the professions in New York State. *Incorporation.*—Under such name and with such number of trustees or other managers, and with such powers, privileges, and duties, and subject to such limitations and restrictions in all respect as the regents may prescribe in conformity to law, the regents by an instrument under their seal and recorded in their office incorporate institutions or asssociation for the promotion of science, literature, art, history, or other departments of knowledge or of education in any way, associations of teachers, students, graduates of educational institutions, and other associations whose approved purposes are in whole or in part of educational or cultural value deemed worthy of recognition and encouragement by the university. No institution or association which might be incorporated by the regents may be incorporated under any other general law without their consent. *Extension.*—The regents extend to the people at large increased educational opportunities, facilities, stimulate interest therein, recommend methods, designate suitable teachers and lecturers, conduct examinations and grant credentials, and otherwise organize, aid, and conduct such work. *Visitation.*—The regents or their representatives visit, examine into, and inspect the institutions in the university and require annual reports duly verified from the various institutions of the university. For refusal or continued neglect to make any report required or for violation of any law or any rule of the university, the regents may suspend the charter or any of the rights and privileges of such institution.

has been completely reorganized and greatly enlarged with more adequate salaries under the superintendency of Dr. Finegan. An examination of the organization lists shows, however, that in most of the State departments the salaries are still lamentably low and very inadequate.

On pages 37 and 38 is a tabular statement showing the salaries attaching to certain positions in the departments having such positions. Wherever there are several positions having the same title but different salaries the highest salary is given in that table.

With respect to the salary of the chief State school officer, it is found that the salaries range from $2,000 in Nebraska to $12,000 in Pennsylvania. Two States, New Jersey and New York, pay $10,000; Connecticut pays $9,000, Maryland $8,000, and two States, Illinois and Massachusetts, pay $7,500; in six States the salary of the State superintendent is less than $3,000. In all the States paying less than $4,000 the State superintendent is elected by vote of the people. In nine different State departments there are members of the staff who receive salaries higher than those paid the State superintendents.

With respect to the salaries of members of the department, State Supt. Cary, in the address previously referred to, gave it as his opinion—

> that $2,500 ought at the present time to be a minimum for women and $3,000 a minimum for men. .I would not undertake to place a maximum, but it should be sufficiently high to secure men of great enthusiasm and energy, with the best modern training and with splendid social qualities. They should certainly be equal in every essential respect to the men who serve as professors of education in our best universities.[3]

In Pennsylvania and New York most of the principal members of the staffs receive between $4,000 and $5,500 per annum.

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[3] School and Society, Mar. 20, 1920, p. 342.

						tions; outlines courses for reading circles; formulates rules regarding the organization, etc., of commercial and business colleges; is State textbook commission; prepares and submits budget for institutions under its control; approves colleges and universities which grant academic and professional degrees; apportions supplementary aid to weak districts; makes rules for administration.
Oregon.............. (School laws, 1919, pp. 6, 19, 140.)	3	....	Governor, secretary of state, and superintendent of public instruction.	....	Superintendent is secretary; meets in January and July.	Prescribes rules for the general government of the public schools; authorizes textbooks adopted by textbook commission; prepares a course of study for grammar-grade schools; prescribes rules fixing standards for high schools receiving money from county high-school fund; indicates at least 60 per cent of the questions in theory and practice used in county examinations; decides appeals made to State superintendent and submitted by him.
Pennsylvania........ (School laws, 1919, pp. 52, 60–61, 99, 121, 164, 184.)	7	Appointive members 6 years, 1 appointed each year.	Superintendent of public instruction, ex officio, and 6 members appointed by the governor with the consent of two-thirds of the senate; 3 of appointive members shall be successful educators of the State.	Necessary expense incurred in the performance of their duties.	Superintendent is president and chief executive officer of board; makes its own by-laws and has such officers it deems necessary.	Controls all real and personal property belonging to the State school fund; reports and recommends to the governor and legislature necessary legislation to make schools efficient; equalizes, through special appropriations or otherwise, the educational advantages of the different parts of the State; inspects and requires reports from schools or institutions wholly or partly supported by the State; encourages and promotes instruction in agriculture, manual training, and household arts; prescribes rules for the sanitary equipment and inspection of school buildings; prepares plans for school buildings; provides for education of certain blind children; makes rules and regulations for management of State normal schools; administers vocational education; makes appointments to State scholarships.
Rhode Island....... (School laws, 1910, pp. 8-11, 25-27, 38, 46, 67, 75; ch. 678, Apr. 25, 1911; ch. 828, Apr. 29, 1912; ch. 839, May 3, 1912; chs. 943, 944, 945, 947, Apr. 29, 1913; ch. 1284, Apr. 23, 1915; ch. 1347, Apr. 14, 1916; ch. 1470, Mar. 28, 1917; ch. 1622, Apr. 17, 1918; ch. 1654, Apr. 19, 1918; ch. 1737, Apr. 23, 1919; ch. 1812, Apr. 24, 1919.)	8	Elective members, 6 years; 2 elected each 2 years.	Governor and lieutenant governor ex officio, and 6 members elected by the legislature for 6 years, 1 member from each county in the State, except Providence County, which has 2 members.	Necessary expenses incurred in the discharge of duties.	Governor is president, commissioner of education is secretary; holds monthly meetings and may hold special meetings on call of president or secretary.	Has general supervision and control of public schools, high schools, normal schools, and normal institutes; appoints State commissioner of education; prepares and furnishes blanks on which reports from all State-aided schools or institutions are required; furnishes registers for private schools and receives reports from them; provides scholarships at Brown University for post graduate work in preparation for teaching; provides for examinations and certification of teachers; administers teachers' pension law; supervises education of blind; apportions money for public libraries, prescribes books for same, and provides for visitation and examination; maintains a system of traveling libraries; apportions State aid for deficient schools; provides supervision for certain towns; appoints to State scholarships at Rhode Island School of Design and Rhode Island College of Pharmacy; serves as State board for vocational education; apportions State aid for vocational education; supervises reeducation and rehabilitation of crippled victims of industry; approves standards for "reading and writing" tests in Americanization and appoints supervisor of Americanization.

Salaries of certain officers in State departments of education—Continued.

State.	State superintendent or commissioner of education.	Deputy or assistant superintendent.	Chief of administrative division or chief clerk.	Supervisor of rural schools.	Supervisor of high schools.	Director of vocational education.	Supervisor of agriculture.	Supervisor of trades and industry.	Supervisor of home economics.	Director of physical education.	Director of Americanization.	Director of teacher placement.	Supervisor of teacher training.	Statistician.	Secretary of retirement or pension fund.
Nevada	$3,600	[7] $2,400					[6] $3,000	$2,750	$2,500						
New Hampshire	5,000	4,000	$3,000				2,600			$1,750					
New Jersey	10,000	5,000	4,500	[1] $5,000	[1] $5,000	[1] $5,000	4,000	3,200	2,400	5,000			$4,000	$2,540	
New Mexico	3,000	2,250	2,000			2,800	2,700	2,500							
New York	10,000	7,000	4,500	[1] 5,500	[1] 5,500	5,500	4,200	4,200	3,500	3,000	$4,250		[1] 5,500	2,000	
North Carolina	4,000		2,500	3,500	3,500	3,500	2,700	2,700	2,000		2,000		3,500		
North Dakota	3,000	2,500	1,500	2,200	2,200										
Ohio	4,000	2,500	2,240		2,240		2,800	3,000	2,700				2,500	2,400	
Oklahoma	2,500	2,100	2,000	3,500	2,400		1,500								
Oregon	3,000	2,640					[4] 1,500	[6] 3,000							
Pennsylvania	12,000	7,500	5,000	5,000	4,000	5,000	4,000	4,000	3,500	4,000	5,000	$3,600	5,000		$4,200
Rhode Island	6,000	3,000	1,340				2,500	3,000	2,500		1,800				
South Carolina	2,500		2,400	3,500	3,500		3,500	3,500	2,400		2,100	1,800	2,800		
South Dakota	2,400	2,520	1,620	2,400	[6] 3,300		[5] 666		2,300		2,400				
Tennessee	3,600		2,000	3,000	3,600		3,000	3,000							
Texas	4,000	2,700		3,300	2,600		3,700		3,500				3,500	1,500	
Utah	4,000	3,300			[5] 2,500	3,300	2,750	2,500	2,750	[5] 3,000	2,500				
Vermont	6,000		2,100	2,600	3,500							1,400			
Virginia	4,500		3,850	3,500	3,500		3,500	3,500	2,100	3,500		1,800	3,250		
Washington	3,000	3,000		2,100	2,640	4,500	2,600	3,600	2,700						
West Virginia	5,000		2,400	3,600	3,600									1,320	
Wisconsin	5,000	4,500		3,250	4,250		4,000	4,000	3,000					1,400	
Wyoming	3,000	2,100				3,000	2,000		1,980						

[1] Assistant commissioner.

[4] Half time.

[5] Part time.

[6] Is also director of vocational education.

[7] Is also secretary of retirement fund.

MEMBERS OF STAFFS OF STATE DEPARTMENTS OF EDUCATION AND SALARIES PAID EACH.

ALABAMA.

State superintendent of education		$5,000
Assistant superintendent, and director of teacher training		4,000
Chief clerk		2,400
2 bookkeepers	each	1,800
Filing clerk		1,500
Certification and placement secretary		3,500
Assistant certification and placement secretary		2,100
Reading circle secretary		2,100
Teacher-training supervisor for Negro schools		1,800
Statistician		3,000
2 supervisors of rural schools	each	3,500
Supervisor of construction		3,300
Architectural draftsman		2,500
Specialist in primary education		2,250
Specialist in elementary education		2,100
Supervisor of secondary education		4,000
Assistant supervisor of secondary education		3,000
Director of physical and health education		3,000
Director of vocational education		4,000
Supervisor of agriculture		3,000
Supervisor of trades and industry		3,000
Supervisor of home economics		2,400
Secretary for exceptional education		2,400
10 stenographers	total	12,060
Total		83,010

ARIZONA.

State superintendent of public instruction		3,300
Deputy superintendent of public instruction		2,700
3 stenographers	each	1,500
3 members board of examiners	do	300
Director of vocational education		3,600
State supervisor of home economics		2,200
State supervisor of agriculture		2,500
State supervisor of trades and industry		2,700
2 stenographers	each	1,200
Total		24,800

ARKANSAS.

State superintendent of public instruction		2,500
Deputy superintendent of public instruction		1,800
Assistant deputy superintendent of public instruction		1,200
High-school inspector[1]		3,500
3 rural school agents[1]	each	3,500
2 clerks[1]	total	1,980
State supervisor of agriculture[2]		4,000
State supervisor trades and industries[2]		4,000
State supervisor home economics[2]		3,000
Supervisor teacher-training vocational agriculture		2,500
Clerk		1,200
Total		36,180

CALIFORNIA.

State superintendent of public instruction		$5,000
Deputy superintendent of public instruction		3,600
Assistant superintendent in charge of Americanization		3,000
Commissioner of elementary schools		4,000
Commissioner of secondary schools		4,000
Commissioner of industrial and vocational education		4,000
Supervisor of trade and industrial instruction		3,600
Supervisor of agricultural instruction		3,600
Supervisor of teacher-training courses in home economics		3,600
Supervisor of physical education		3,600
3 assistant supervisors of physical education	each	2,400
Secretary, commission on credentials		3,000
Assistant secretary, commission on credentials		1,620
Assistant secretary, State board of education		2,100
Assistant secretary, retirement board		1,920
Statistician		2,400
Bookkeeper		2,100
Do		1,920
Secretary to State superintendent		1,800
Assistant statistician		1,260
Assistant bookkeeper		1,440
Attendance agent		1,680
2 stenographers	each	1,500
Do	do	1,380
Stenographer		1,260
Do		1,200
Do		1,080
9 stenographers	each	1,020
Stenographer		900
3 clerks	each	1,320
Clerk		1,200
Messenger		780
Total		89,780

COLORADO.

State superintendent of public instruction		3,000
Deputy State superintendent of public instruction		2,100
Rural-school supervisor		1,800
Statistician		1,500
Assistant librarian		1,500
State teacher of adult blind		1,500
Secretary to State teacher of adult blind		1,000
2 stenographers	each	1,200
Clerk		1,200
Total		16,000

CONNECTICUT.

Commissioner of education		
Chief clerk		
Supervisor of secondary education		
Supervisor of elementary education		
36 supervising agents		2,[illegible]
Director of trade and vocational education		
Director of accounts and purchases		

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[1] Receive salaries from General Education Board.

[2] Loaned to department by State univ

CONNECTICUT—Continued.

Director of Americanization	$3,000
Supervisor of evening schools	3,000
Director of investigations and surveys	3,250
Supervisor of attendance and employment	3,000
8 attendance agents ... each	1,800
6 school nurses ... do	1,500
Supervisor of examinations and certificates	2,500
35 clerks	800-1,750
Total	[3] 233,875

DELAWARE.

Commissioner of education	5,000
Assistant commissioner of education	3,600
Director of vocational education and teacher trainer	4,000
Supervisor of vocational agriculture	3,500
Supervisor of vocational home economics	2,500
Supervisor of trades and industries	4,500
Stenographer	1,500
Do	1,200
Total	26,400

FLORIDA.

State superintendent of public instruction	3,600
2 rural school inspectors ... each	2,000
State agent for Negro rural schools	3,000
High-school inspector	3,000
Chief clerk	2,200
Statistician	1,800
Certificate and Smith-Hughes clerk	1,800
2 stenographers ... each	1,200
3 members State board of examiners ... do	2,000
State director for vocational education	3,000
Supervisor of agricultural education	3,000
Supervisor of trades and industries	3,000
Supervisor of home economics	2,000
Total	38,800

GEORGIA.

State superintendent of schools	4,500
3 State supervisors for rural schools ... each	3,000
Rural school agent [4]	3,500
Special supervisor for Negro work [4]	3,500
State school auditor	3,000
State high school inspector [4]	3,500
Clerk	2,000
Secretary	1,800

Vocational Education.

Supervisor of agriculture	3,500
Supervisor of trades and industries	3,600
Supervisor of home economics	2,400
Grand total	40,300

IDAHO.

State commissioner of education	6,000
State superintendent of public instruction	2,400
Business agent and auditor	2,700
Assistant to State superintendent	2,000
Chief clerk	1,500
Certification clerk	1,560
Bookkeeper	1,380
2 stenographers	1,320

IDAHO—Continued.

Vocational Education.

State director of vocational education	$3,200
State supervisor of home economics and teacher training	2,400
State supervisor of agriculture and teacher training	2,600
Assistant State supervisor of trades and industries and teacher training	2,550
Assistant State supervisor of trades and industries (mining)	2,600
Stenographer	1,320
Grand total	34,850

ILLINOIS.

State superintendent of public instruction	7,500
Supervisor of high schools	4,800
Do	3,360
3 assistant superintendents for duty as—	
Supervisor rural and elementary schools	3,420
Do	3,420
Head of legal department	3,420
Chief clerk	2,616
Textbook clerk	2,400
Statistical clerk	2,400
Do	2,304
Clerk	2,000
2 stenographers ... each	1,260
3 stenographers ... do	1,200
Messenger	1,080

State Examining Board for County Certificates.

Secretary	3,420
Stenographer	1,200

Board of Trustees for Illinois State Teachers' Pension and Retirement Fund.

Secretary	3,600
2 clerks ... each	1,200
2 stenographers ... do	1,200

Board for Vocational Education.

Supervisor of industrial education	4,000
Supervisor of agricultural education	3,800
Supervisor of home-economics education	3,000
Assistant supervisor of industrial education	2,400
Assistant supervisor of agricultural education	2,400
Clerk	1,800
2 stenographers ... each	1,200
Official adviser on the recognition of schools of music	Expenses.
Official adviser on the recognition of kindergartens	Expenses.
3 official advisers on the recognition of colleges and universities	Expenses.
3 deputy examiners for entrance into dental and medical colleges	Fees.
Grand total	[5] 77,660

INDIANA.

State superintendent of public instruction	$5,000
Assistant superintendent of public instruction	3,000
Deputy superintendent of public instruction	1,800
High school inspector	2,500
Director of vocational education	6,000

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[3] An average used for supervising agents and clerks.

[4] Paid by General Education Board.

[5] Exclusive of expenses and fees.

INDIANA—Continued.

Supervisor of teacher training	$3,000
Clerk of manuscript department	2,300
State director of agriculture	3,700
State director of home economics	2,000
Clerk	1,400
2 stenographers each	1,400
7 stenographers do	1,200
Total	41,900

IOWA.

State superintendent of public instruction	4,000
Deputy State superintendent of public instruction	2,700
Chief clerk	1,800
Secretary to State superintendent	1,500
Inspector of normal training high schools	2,400
Inspector of consolidated schools	2,400
Inspector of graded and high schools	2,400
Inspector of rural schools	2,400
State director of vocational education	3,600
Supervisor of trades and industries	3,000
Assistant supervisor of agriculture	2,700
Supervisor of home economics	2,200
Clerk	1,020
Secretary, educational board of examiners	1,800
3 stenographers each	1,200
Director of the teachers' placement bureau (half time)	1,200
4 clerks each	1,200
Clerk	960
Total	44,420

KANSAS.

State superintendent of public instruction	3,000
Assistant State superintendent of public instruction	2,200
Chief clerk	1,650
Statistical clerk	1,200
2 stenographers each	1,000
Secretary, State board of education	2,400
Stenographer to secretary, State board of education	1,200
2 high-school supervisors each	2,000
2 rural-school supervisors do	2,000
Vocational Education.	
State director of vocational education (one-half time)	2,000
State supervisor of vocational agriculture	2,500
Stenographer	1,200
Grand total	27,350

KENTUCKY.

State superintendent of public instruction	4,000
State supervisor of high schools [1]	3,500
3 State rural-school supervisors [1] each	3,500
State supervisor and director of vocational education	3,000
State supervisor of home economics education	2,700
Director of physical education	4,000
Chief clerk	2,500
1 clerk	1,500
Do	1,200
Do	1,000
2 stenographers each	1,500
3 stenographers do	1,200
Bureau of Inspection.	
2 inspectors each	1,000
Grand total	42,500

LOUISIANA.

State superintendent of education	$5,000
State high-school inspector	4,000
Assistant State high-school inspector	3,600
Chairman State teachers' examining committee and State institute conductor	4,000
State rural-school supervisor	4,000
Assistant State rural-school supervisor	3,000
Do	3,000
State director of physical training	3,600
State agent of rural schools for Negroes	4,500
Assistant State agent of rural schools for Negroes	3,600
State supervisor of Jeanes teachers (Negro)	1,200
State Rosenwald building agent (Negro)	1,500
State supervisor of agricultural schools	3,600
State director of agricultural teacher-training	3,600
State supervisor of home economics	3,000
Assistant State supervisor of home economics	2,400
Chief clerk	3,000
Clerk	2,400
Do	1,800
5 clerks each	1,200
Porter	900
Total	67,700

MAINE.

State superintendent of public schools	4,600
Deputy State superintendent of public schools	3,250
Agent for secondary education	2,700
Agent for unorganized territory	2,700
Agent for rural education	3,200
Do	2,700
State director of vocational education	2,700
State supervisor of agricultural education	2,400
State supervisor of trades and industries	2,400
State supervisor of home economics	1,700
Secretary	1,200
2 clerks each	1,000
Clerk	936
2 clerks each	900
Clerk	800
2 clerks	780
Total	36,646

MARYLAND.[2]

State superintendent of schools	8,000
Assistant superintendent of schools	6,000
Supervisor of high schools	4,250
Supervisor of high schools	4,000
Supervisor of rural schools	4,250
Supervisor of vocational education	5,000
Supervisor of physical education	5,000
Supervisor of colored schools	4,000
Supervisor of public school music	3,000
Executive secretary	3,000
Chief clerk	2,000
Credential clerk	1,800
Bookkeeper	1,200
2 stenographers each	1,200
Stenographer	1,000
Total	55,900

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[1] Receive salaries from General Education Board.

[2] State department reports that it is looking also for a specialist in measurements at $5,000 or $6,000.

Digest of laws relating to chief State school officer—Continued.

State, and title of officer.	Term of office in years.	Manner of selection.	Salary.	Powers and duties
Rhode Island........ Commissioner of education.	1	Elected by State board of education.	$6,000	Is secretary of State board of education; apportions State appropriation for public schools; hears and decides appeals and prescribes rules for making appeals; visits towns to inspect schools; assists in securing uniformity of textbooks in all towns; prepares programs for Grand Army flag day and for Rhode Island independence day, arbor, and other special days; approves unions of towns for employment of superintendents and draws order on treasurer for one-half of salaries; approves consolidation of schools; is one of managers of Rhode Island State College; holds teachers' institutes; is member of board of trustees of State normal school.
South Carolina....... Superintendent of education.	2	By vote of the people.	2,500	Is member and secretary of State board of education; has general supervision of public schools; visits counties to inspect schools and diffuse information; with advice of State board, secures uniformity of textbooks; prepares and furnishes registers, forms, etc., to county superintendents for making reports; has school laws printed; receives reports from State institutions of higher learning; is member of board of trustees of institute for deaf, dumb, and blind; is member of board of trustees of State university and State college for women.
South Dakota........ Superintendent of public instruction.	2	.....do........	2,400	Has general supervision of all public and private schools and of city and county superintendents; meets county superintendents in convention to secure uniform administration of the school laws; inspects and accredits high schools; renders opinions regarding school laws; furnishes blanks for reports of county and city superintendents; attends teachers' institutes and prescribes rules for holding county normal institutes and summer schools for teachers; approves list of institute conductors; holds examinations of teachers and issues certificates; prepares questions for county examinations; is member of teachers' reading circle board of managers; is president of free library commission, State board of health, State child welfare commission; has charge of Americanization, State aid for rural and consolidated schools; establishment of normal training departments and State aid in high schools; approves courses in normal schools, colleges, and universities in State leading to teachers' certificates.
Tennessee............ Superintendent of public instruction.	2	Appointed by the governor.	3,600	Is member and secretary of State board of education; is chairman of State board of examiners; is member of all other educational bodies or associations; is treasurer of the Peabody Normal College fund; collects and disseminates statistical and other information regarding the public shcools; makes inspection of public schools; holds county conferences of teachers; prepares and distributes blanks for reports of officers and teachers; has school laws printed and distributed and sees that they are carried out; may appoint persons in each county to examine schools and report thereon; requires county superintendents to report annually; reports scholastic population to State comptroller annually; has general supervision of county high schools; is member of State textbook commission; is member of free library commission; supervises work of the director of library extension.
Texas................ State superintendent of public instruction.	2	By vote of the people.	4,000	Is secretary of State board of education; apportions State school funds; has general supervision of public schools and of the administration of the school laws; hears and determines appeals from subordinate officers, but his decisions may be reversed by State board; prescribes forms for reports; approves accounts to be paid from school fund by State treasurer; issues instructions to school officers, which instructions are binding; has school laws printed and distributed; requires reports from county, city, and district officers; appoints State board of teachers' examiners and issues State certificates on their recommendation; prepares questions for county examinations; is member of State textbook commission; supervises summer normal institutes; has supervision of school census; is administrative officer in charge of system of distribution of textbooks; is executive officer of State board for vocational education; has charge of administration of $2,000,000 special fund for rural schools.
Utah................. Superintendent of public instruction.	4	.....do.........	4,000	Is member and chairman of State board of education; has general supervision of public instruction; apportions State school funds; requires reports from counties and cities and withholds apportionment from those not reporting; prepares and furnishes forms, blanks, etc., for making reports; visits each county in the State at least once a year; may examine officers' accounts relative to school funds; holds annual conventions of county and city superintendents; with principal of State normal school and county superintendent constitutes governing board of teachers' institutes; is member of State textbook commission; is member of commission to fix course of study; is member of juvenile court commission.

Vermont Commissioner of education.	(1)	Elected by State board of education.	6,000	Is executive officer of the State board of education; he shall, at such times and in such detail as said board directs, make reports to said board concerning the public educational system together with such recommendations as he deems proper for the promotion of the educational interests of the State.
Virginia Superintendent of public instruction.	4	By vote of the people.	4,500	Is member and president of the State board of education; is member of boards of visitors of State educational institutions; sees to execution of school laws; interprets school laws to school officials and his decisions are final unless reversed by State board; furnishes blanks and requires reports from division superintendents; may appoint persons to inspect schools in counties; makes inspection throughout the State; prepares scheme for apportioning State school funds; prescribes forms of contracts with teachers; signs warrants of State board; issues teachers' certificates.
Washington Superintendent of public instruction.	4	do	3,000	Is member and president of State board of education; has general supervision of the public schools; apportions State school funds to counties; has blanks, etc., printed for reports and for the administration of the school laws; attends educational meetings and visits counties; has school laws printed and distributed; hears and determines appeals; holds annual conventions of county superintendents; requires annual reports from educational institutions and county superintendents; keeps directory of regents and faculties of State educational institutions and of all teachers receiving certificates; issues State certificates; prepares a State manual; is member of board of visitors of State College; is member of commission on community welfare; is member of trustees of teachers' retirement fund; is chief executive officer of State board for vocational education.
West Virginia Superintendent of free schools.	4	do	$5,000	Shall have general supervision of all schools; is chief executive officer of the State board of education and member of the board of the school fund; shall have printed and provide for the distribution of blank forms for the carry-on of school work; may institute proceedings against violators of the school laws; shall have authority to call conferences of county, district and city superintendents; shall give interpretations of the school law and the rules of the State board; shall have prepared and published manuals of courses of study, school library lists, and such other bulletins or pamphlets as the needs of the school system demand; shall publish a biennial report; appoint assistants.
Wisconsin Superintendent of public instruction.	4	do	5,000	Has general supervision of the public schools; apportions school-fund income; attends educational meetings and makes investigation of educational systems and the condition of the public schools and disseminates educational information; prepares course of study for public schools; furnishes blanks for reports and requires reports from school officers; publishes school laws and hears and determines appeals; exercises general supervision over county schools of agriculture, manual training schools, county normal schools, and schools for the deaf; formulates course of study for such schools; holds annual county superintendents' convention; issues State teachers' certificates; makes regulations for the management of township and district libraries; is member of board of regents of the State university; is member of board of regents of normal schools and board of trustees of teachers' retirement fund.
Wyoming Superintendent of public instruction.[4]	4	do	3,000	Has general supervision of the public schools; makes rules and regulations for carrying school law into effect; explains law; decides disputes; furnishes contracts to publishers for sale of textbooks; advises regarding courses of study in State Normal School; may revoke certificates; arranges time, place, and manner of holding examinations; issues certificates on recommendation of State board of education.

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[1] Indefinite.

[4] Wyoming has also a commissioner of education elected by the State board of education who executes the educational policies of the board under general supervision and direction of the State superintendent. The salary of the commissioner is $3,000 per annum.

Digest of laws relating to chief State school officer—Continued.

State, and title of officer.	Term of office in years.	Manner of selection.	Salary.	Powers and duties
Rhode Island........ **Commissioner of education.**	1	**Elected by State board of education.**	**$6,000**	Is secretary of State board of education; apportions State appropriation for public schools; hears and decides appeals and prescribes rules for making appeals; visits towns to inspect schools; assists in securing uniformity of textbooks in all towns; prepares programs for Grand Army flag day and for Rhode Island independence day, arbor, and other special days; approves unions of towns for employment of superintendents and draws order on treasurer for one-half of salaries; approves consolidation of schools; is one of managers of Rhode Island State College; holds teachers' institutes; is member of board of trustees of State normal school.
South Carolina....... **Superintendent of education.**	2	**By vote of the people.**	2,500	Is member and secretary of State board of education; has general supervision of public schools; visits counties to inspect schools and diffuse information; with advice of State board, secures uniformity of textbooks; prepares and furnishes registers, forms, etc., to county superintendents for making reports; has school laws printed; receives reports from State institutions of higher learning; is member of board of trustees of institute for deaf, dumb, and blind; is member of board of trustees of State university and State college for women.
South Dakota........ **Superintendent of public instruction.**	2	.....do........	2,400	Has general supervision of all public and private schools and of city and county superintendents; meets county superintendents in convention to secure uniform administration of the school laws; inspects and accredits high schools; renders opinions regarding school laws; furnishes blanks for reports of county and city superintendents; attends teachers' institutes and prescribes rules for holding county normal institutes and summer schools for teachers; approves list of institute conductors; holds examinations of teachers and issues certificates; prepares questions for county examinations; is member of teachers' reading circle board of managers; is president of free library commission, State board of health, State child welfare commission; has charge of Americanization, State aid for rural and consolidated schools; establishment of normal training departments and State aid in high schools; approves courses in normal schools, colleges, and universities in State leading to teachers' certificates.
Tennessee............ **Superintendent of public instruction.**	2	**Appointed by the governor.**	3,600	Is member and secretary of State board of education; is chairman of State board of examiners; is member of all other educational bodies or associations; is treasurer of the Peabody Normal College fund; collects and disseminates statistical and other information regarding the public shcools; makes inspection of public schools; holds county conferences of teachers; prepares and distributes blanks for reports of officers and teachers; has school laws printed and distributed and sees that they are carried out; may appoint persons in each county to examine schools and report thereon; requires county superintendents to report annually; reports scholastic population to State comptroller annually; has general supervision of county high schools; is member of State textbook commission; is member of free library commission; supervises work of the director of library extension.
Texas................ **State superintendent of public instruction.**	2	**By vote of the people.**	4,000	Is secretary of State board of education; apportions State school funds; has general supervision of public schools and of the administration of the school laws; hears and determines appeals from subordinate officers, but his decisions may be reversed by State board; prescribes forms for reports; approves accounts to be paid from school fund by State treasurer; issues instructions to school officers, which instructions are binding; has school laws printed and distributed; requires reports from county, city, and district officers; appoints State board of teachers' examiners and issues State certificates on their recommendation; prepares questions for county examinations; is member of State textbook commission; supervises summer normal institutes; has supervision of school census; is administrative officer in charge of system of distribution of textbooks; is executive officer of State board for vocational education; has charge of administration of $2,000,000 special fund for rural schools.
Utah................. **Superintendent of public instruction.**	4	.....do.........	4,000	Is member and chairman of State board of education; has general supervision of public instruction; apportions State school funds; requires reports from counties and cities and withholds apportionment from those not reporting; prepares and furnishes forms, blanks, etc., for making reports; visits each county in the State at least once a year; may examine officers' accounts relative to school funds; holds annual conventions of county and city superintendents; with principal of State normal school and county superintendent constitutes governing board of teachers' institutes; is member of State textbook commission; is member of commission to fix course of study; is member of juvenile court commission.

Vermont............ Commissioner of education.	[1]	Elected by State board of education.	6,000	Is executive officer of the State board of education; he shall, at such times and in such detail as said board directs, make reports to said board concerning the public educational system together with such recommendations as he deems proper for the promotion of the educational interests of the State.
Virginia.............. Superintendent of public instruction.	4	By vote of the people.	4,500	Is member and president of the State board of education; is member of boards of visitors of State educational institutions; sees to execution of school laws; interprets school laws to school officials and his decisions are final unless reversed by State board; furnishes blanks and requires reports from division superintendents; may appoint persons to inspect schools in counties; makes inspection throughout the State; prepares scheme for apportioning State school funds; prescribes forms of contracts with teachers; signs warrants of State board; issues teachers' certificates.
Washington.......... Superintendent of public instruction.	4	.....do.........	3,000	Is member and president of State board of education; has general supervision of the public schools; apportions State school funds to counties; has blanks, etc., printed for reports and for the administration of the school laws; attends educational meetings and visits counties; has school laws printed and distributed; hears and determines appeals; holds annual conventions of county superintendents; requires annual reports from educational institutions and county superintendents; keeps directory of regents and faculties of State educational institutions and of all teachers receiving certificates; issues State certificates; prepares a State manual; is member of board of visitors of State College; is member of commission on community welfare; is member of trustees of teachers' retirement fund; is chief executive officer of State board for vocational education.
West Virginia........ Superintendent of free schools.	4	.....do.........	$5,000	Shall have general supervision of all schools; is chief executive officer of the State board of education and member of the board of the school fund; shall have printed and provide for the distribution of blank forms for the carry-on of school work; may institute proceedings against violators of the school laws; shall have authority to call conferences of county, district and city superintendents; shall give interpretations of the school law and the rules of the State board; shall have prepared and published manuals of courses of study, school library lists, and such other bulletins or pamphlets as the needs of the school system demand; shall publish a biennial report; appoint assistants.
Wisconsin............ Superintendent of public instruction.	4	.....do.........	5,000	Has general supervision of the public schools; apportions school-fund income; attends educational meetings and makes investigation of educational systems and the condition of the public schools and disseminates educational information; prepares course of study for public schools; furnishes blanks for reports and requires reports from school officers; publishes school laws and hears and determines appeals; exercises general supervision over county schools of agriculture, manual training schools, county normal schools, and schools for the deaf; formulates course of study for such schools; holds annual county superintendents' convention; issues State teachers' certificates; makes regulations for the management of township and district libraries; is member of board of regents of the State university; is member of board of regents of normal schools and board of trustees of teachers' retirement fund.
Wyoming............ Superintendent of public instruction.[4]	4	.....do.........	3,000	Has general supervision of the public schools; makes rules and regulations for carrying school law into effect; explains law; decides disputes; furnishes contracts to publishers for sale of textbooks; advises regarding courses of study in State Normal School; may revoke certificates; arranges time, place, and manner of holding examinations; issues certificates on recommendation of State board of education.

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[1] Indefinite.

[4] Wyoming has also a commissioner of education elected by the State board of education who executes the educational policies of the board under general supervision and direction of the State superintendent. The salary of the commissioner is $3,000 per annum.

Digest of laws relating to chief State school officer—Continued.

State, and title of officer.	Term of office in years.	Manner of selection.	Salary.	Powers and duties
Rhode Island........ Commissioner of education.	1	Elected by State board of education.	$6,000	Is secretary of State board of education; apportions State appropriation for public schools; hears and decides appeals and prescribes rules for making appeals; visits towns to inspect schools; assists in securing uniformity of textbooks in all towns; prepares programs for Grand Army flag day and for Rhode Island independence day, arbor, and other special days; approves unions of towns for employment of superintendents and draws order on treasurer for one-half of salaries; approves consolidation of schools; is one of managers of Rhode Island State College; holds teachers' institutes; is member of board of trustees of State normal school.
South Carolina....... Superintendent of education.	2	By vote of the people.	2,500	Is member and secretary of State board of education; has general supervision of public schools; visits counties to inspect schools and diffuse information; with advice of State board, secures uniformity of textbooks; prepares and furnishes registers, forms, etc., to county superintendents for making reports; has school laws printed; receives reports from State institutions of higher learning; is member of board of trustees of institute for deaf, dumb, and blind; is member of board of trustees of State university and State college for women.
South Dakota........ Superintendent of public instruction.	2	.....do........	2,400	Has general supervision of all public and private schools and of city and county superintendents; meets county superintendents in convention to secure uniform administration of the school laws; inspects and accredits high schools; renders opinions regarding school laws; furnishes blanks for reports of county and city superintendents; attends teachers' institutes and prescribes rules for holding county normal institutes and summer schools for teachers; approves list of institute conductors; holds examinations of teachers and issues certificates; prepares questions for county examinations; is member of teachers' reading circle board of managers; is president of free library commission, State board of health, State child welfare commission; has charge of Americanization, State aid for rural and consolidated schools; establishment of normal training departments and State aid in high schools; approves courses in normal schools, colleges, and universities in State leading to teachers' certificates.
Tennessee............ Superintendent of public instruction.	2	Appointed by the governor.	3,600	Is member and secretary of State board of education; is chairman of State board of examiners; is member of all other educational bodies or associations; is treasurer of the Peabody Normal College fund; collects and disseminates statistical and other information regarding the public shcools; makes inspection of public schools; holds county conferences of teachers; prepares and distributes blanks for reports of officers and teachers; has school laws printed and distributed and sees that they are carried out; may appoint persons in each county to examine schools and report thereon; requires county superintendents to report annually; reports scholastic population to State comptroller annually; has general supervision of county high schools; is member of State textbook commission; is member of free library commission; supervises work of the director of library extension.
Texas................ State superintendent of public instruction.	2	By vote of the people.	4,000	Is secretary of State board of education; apportions State school funds; has general supervision of public schools and of the administration of the school laws; hears and determines appeals from subordinate officers, but his decisions may be reversed by State board; prescribes forms for reports; approves accounts to be paid from school fund by State treasurer; issues instructions to school officers, which instructions are binding; has school laws printed and distributed; requires reports from county, city, and district officers; appoints State board of teachers' examiners and issues State certificates on their recommendation; prepares questions for county examinations; is member of State textbook commission; supervises summer normal institutes; has supervision of school census; is administrative officer in charge of system of distribution of textbooks; is executive officer of State board for vocational education; has charge of administration of $2,000,000 special fund for rural schools.
Utah................ Superintendent of public instruction.	4	.....do........	4,000	Is member and chairman of State board of education; has general supervision of public instruction; apportions State school funds; requires reports from counties and cities and withholds apportionment from those not reporting; prepares and furnishes forms, blanks, etc., for making reports; visits each county in the State at least once a year; may examine officers' accounts relative to school funds; holds annual conventions of county and city superintendents; with principal of State normal school and county superintendent constitutes governing board of teachers' institutes; is member of State textbook commission; is member of commission to fix course of study; is member of juvenile court commission.

Vermont Commissioner of education.	[1]	Elected by State board of education.	6,000	Is executive officer of the State board of education; he shall, at such times and in such detail as said board directs, make reports to said board concerning the public educational system together with such recommendations as he deems proper for the promotion of the educational interests of the State.
Virginia Superintendent of public instruction.	4	By vote of the people.	4,500	Is member and president of the State board of education; is member of boards of visitors of State educational institutions; sees to execution of school laws; interprets school laws to school officials and his decisions are final unless reversed by State board; furnishes blanks and requires reports from division superintendents; may appoint persons to inspect schools in counties; makes inspection throughout the State; prepares scheme for apportioning State school funds; prescribes forms of contracts with teachers; signs warrants of State board; issues teachers' certificates.
Washington Superintendent of public instruction.	4	.....do.........	3,000	Is member and president of State board of education; has general supervision of the public schools; apportions State school funds to counties; has blanks, etc., printed for reports and for the administration of the school laws; attends educational meetings and visits counties; has school laws printed and distributed; hears and determines appeals; holds annual conventions of county superintendents; requires annual reports from educational institutions and county superintendents; keeps directory of regents and faculties of State educational institutions and of all teachers receiving certificates; issues State certificates; prepares a State manual; is member of board of visitors of State College; is member of commission on community welfare; is member of trustees of teachers' retirement fund; is chief executive officer of State board for vocational education.
West Virginia Superintendent of free schools.	4	.....do.........	$5,000	Shall have general supervision of all schools; is chief executive officer of the State board of education and member of the board of the school fund; shall have printed and provide for the distribution of blank forms for the carry-on of school work; may institute proceedings against violators of the school laws; shall have authority to call conferences of county, district and city superintendents; shall give interpretations of the school law and the rules of the State board; shall have prepared and published manuals of courses of study, school library lists, and such other bulletins or pamphlets as the needs of the school system demand; shall publish a biennial report; appoint assistants.
Wisconsin Superintendent of public instruction.	4	.....do.........	5,000	Has general supervision of the public schools; apportions school-fund income; attends educational meetings and makes investigation of educational systems and the condition of the public schools and disseminates educational information; prepares course of study for public schools; furnishes blanks for reports and requires reports from school officers; publishes school laws and hears and determines appeals; exercises general supervision over county schools of agriculture, manual training schools, county normal schools, and schools for the deaf; formulates course of study for such schools; holds annual county superintendents' convention; issues State teachers' certificates; makes regulations for the management of township and district libraries; is member of board of regents of the State university; is member of board of regents of normal schools and board of trustees of teachers' retirement fund.
Wyoming Superintendent of public instruction.[4]	4	.....do.........	3,000	Has general supervision of the public schools; makes rules and regulations for carrying school law into effect; explains law; decides disputes; furnishes contracts to publishers for sale of textbooks; advises regarding courses of study in State Normal School; may revoke certificates; arranges time, place, and manner of holding examinations; issues certificates on recommendation of State board of education.

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[1] Indefinite.

[4] Wyoming has also a commissioner of education elected by the State board of education who executes the educational policies of the board under general supervision and direction of the State superintendent. The salary of the commissioner is $3,000 per annum.

Digest of laws relating to chief State school officer—Continued.

State, and title of officer.	Term of office in years.	Manner of selection.	Salary.	Powers and duties
Rhode Island........ Commissioner of education.	1	Elected by State board of education.	$6,000	Is secretary of State board of education; apportions State appropriation for public schools; hears and decides appeals and prescribes rules for making appeals; visits towns to inspect schools; assists in securing uniformity of textbooks in all towns; prepares programs for Grand Army flag day and for Rhode Island independence day, arbor, and other special days; approves unions of towns for employment of superintendents and draws order on treasurer for one-half of salaries; approves consolidation of schools; is one of managers of Rhode Island State College; holds teachers' institutes; is member of board of trustees of State normal school.
South Carolina....... Superintendent of education.	2	By vote of the people.	2,500	Is member and secretary of State board of education; has general supervision of public schools; visits counties to inspect schools and diffuse information; with advice of State board, secures uniformity of textbooks; prepares and furnishes registers, forms, etc., to county superintendents for making reports; has school laws printed; receives reports from State institutions of higher learning; is member of board of trustees of institute for deaf, dumb, and blind; is member of board of trustees of State university and State college for women.
South Dakota........ Superintendent of public instruction.	2	.....do........	2,400	Has general supervision of all public and private schools and of city and county superintendents; meets county superintendents in convention to secure uniform administration of the school laws; inspects and accredits high schools; renders opinions regarding school laws; furnishes blanks for reports of county and city superintendents; attends teachers' institutes and prescribes rules for holding county normal institutes and summer schools for teachers; approves list of institute conductors; holds examinations of teachers and issues certificates; prepares questions for county examinations; is member of teachers' reading circle board of managers; is president of free library commission, State board of health, State child welfare commission; has charge of Americanization, State aid for rural and consolidated schools; establishment of normal training departments and State aid in high schools; approves courses in normal schools, colleges, and universities in State leading to teachers' certificates.
Tennessee............ Superintendent of public instruction.	2	Appointed by the governor.	3,600	Is member and secretary of State board of education; is chairman of State board of examiners; is member of all other educational bodies or associations; is treasurer of the Peabody Normal College fund; collects and disseminates statistical and other information regarding the public shcools; makes inspection of public schools; holds county conferences of teachers; prepares and distributes blanks for reports of officers and teachers; has school laws printed and distributed and sees that they are carried out; may appoint persons in each county to examine schools and report thereon; requires county superintendents to report annually; reports scholastic population to State comptroller annually; has general supervision of county high schools; is member of State textbook commission; is member of free library commission; supervises work of the director of library extension.
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West Virginia........ Superintendent of free schools.	4	.....do........	$5,000	Shall have general supervision of all schools; is chief executive officer of the State board of education and member of the board of the school fund; shall have printed and provide for the distribution of blank forms for the carry-on of school work; may institute proceedings against violators of the school laws; shall have authority to call conferences of county, district and city superintendents; shall give interpretations of the school law and the rules of the State board; shall have prepared and published manuals of courses of study, school library lists, and such other bulletins or pamphlets as the needs of the school system demand; shall publish a biennial report; appoint assistants.
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Wyoming............ Superintendent of public instruction.[4]	4	.....do........	3,000	Has general supervision of the public schools; makes rules and regulations for carrying school law into effect; explains law; decides disputes; furnishes contracts to publishers for sale of textbooks; advises regarding courses of study in State Normal School; may revoke certificates; arranges time, place, and manner of holding examinations; issues certificates on recommendation of State board of education.

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[4] Wyoming has also a commissioner of education elected by the State board of education who executes the educational policies of the board under general supervision and direction of the State superintendent. The salary of the commissioner is $3,000 per annum.

STAFFS OF STATE DEPARTMENTS OF EDUCATION.

Up to a comparatively recent date State departments of education were small organizations devoting themselves almost entirely to routine, clerical, and statistical work, the staff consisting usually of the State superintendent and a very few clerks. Considerable enlargement of these departments has been made in most of the States in recent years. This is due to changing conditions in education whereby the duties of the State departments have been enlarged greatly, the need of field workers to assist local communities and school officers in solving educational problems, the enactment of the Federal vocational education law, compulsory education, provision for physical education, Americanization, teacher-placement, pensions, etc. The growth of State departments in the South may be attributed almost entirely to two factors: The addition of field workers in rural and secondary education through help furnished by the General Education Board and the addition of directors and supervisors of vocational education due to the enactment of the Smith-Hughes law.

The number of persons necessary to perform efficiently the work of a State department depends largely upon the size of the State, the nature and size of the population, and the diversity of its educational interests. For instance, the New York State Department of Education, which has under its jurisdiction the State museum, the State library, the State library school, higher educational institutions, and the care and upkeep of the large educational building, naturally requires a much larger staff than do the State departments of other States.

This question of the size of a State department was discussed by State Supt. C. P. Cary, of Wisconsin, in February, 1920, at the meeting of the Department of Superintendence of the National Education Association. He stated [2] that in a State the size of Wisconsin or Indiana a State department can reach a high degree of efficiency with a force of about 40 persons, including stenographers and clerks, but not including museum directors, attendance officers, examiners for teachers' licenses and the like, and that of the 40 persons about a dozen should be stenographers and clerks. Of the remainder there should be "at least one man to look after the general correspondence, one to look after appeal cases and questions of law, a statistician with enough training and experience to interpret educational statistics, and a first assistant. This would leave approximately 25 persons who would spend a large share of their time (at least three-fourths during the period schools are in session) in field work." The

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[2] School and Society, Mar. 29, 1920, p. 341.

Harvard University,
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of Education

Mar. 23. 1922

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LETTER OF TRANSMITTAL.

Department of the Interior,
Bureau of Education,
Washington, November 23, 1920.

Sir: No part of our school work is more important than that of the first three or four years, which is done in what is generally known as the primary grades. In these grades there are more children than in any other. Many children, for one reason or another, do not go beyond them. Those who do find all their later school work affected by what they have done in these grades. During the years of life covered by these grades are formed the habits which to a very large extent control the conduct and daily life of the children when they have grown to youth and to manhood and womanhood.

For the purpose of promoting more careful study of the work of the primary grades and of the fundamental principles underlying it, the National Council of Primary Education was formed nearly five years ago and has done much valuable work. From the time of its organization until now the Bureau of Education has cooperated with the council. One of the bureau's specialists has served as its secretary, and it has published the proceedings of the council's meetings and assisted in many other ways. It is, I believe, very desirable that this cooperation be continued and increased to as large an extent as the means of the bureau will permit.

I am transmitting herewith for publication as a bulletin of the Bureau of Education reports of the proceedings of the fifth and sixth annual meetings of the council. The reports have been prepared by Miss Florence C. Fox, the bureau's specialist in educational systems.

Respectfully submitted.

P. P. Claxton,
Commissioner.

The Secretary of the Interior.

NATIONAL COUNCIL OF PRIMARY EDUCATION.

PROCEEDINGS OF THE FIFTH ANNUAL MEETING, CLEVELAND, OHIO, FEBRUARY 24, 1920.

Chairman: **Ella Victoria Dobbs, University of Missouri, Columbia, Mo.**

Advisory Committee: **Marion S. Hanckel, kindergarten and first-grade supervisor, Richmond, Va.; Annie E. Moore, Teachers College, Columbia University, New York, N. Y.; Theda Gildemeister, State Normal School, Winona, Minn.**

OPENING REMARKS BY THE CHAIRMAN.

Miss Ella Victoria Dobbs, University of Missouri.

The Primary Council is very happy indeed to welcome so many friends to its fifth birthday party. Two years ago at Atlantic City, when we were discussing what should be done and how certain work should be carried on in the primary school, the expression, " A day's work," was used in this way: " May the time soon come when we shall measure the work of the primary school in terms of a day's work rather than in terms of 15 minutes of reading, 15 minutes of numbers, 15 minutes of writing, and so on." Then the question was asked, " What is a day's work?" and we had no answer. There was no standard to which we could turn as a measure, because in many schools there are many standards. The council, in its attempt to answer that question, appointed a committee to discover, if possible, what is accepted as a day's work in common practice in our primary schools. At the same time another committee was appointed to determine what may constitute the suitable furnishings and equipment for the primary school room.

These studies have been going on for two years. Observations have been made and reported, questionnaires sent out to many primary workers, and much correspondence has been devoted to these questions. Our annual report, soon to be distributed, will contain all of the observations made. This afternoon our program consists of the continued reports of these two committees and a consideration of the question " What are the strong and weak points in a formal and an informal type of organization in the primary school?"

REPORT OF A STUDY OF TYPICAL DAILY PROGRAMS IN USE IN PRIMARY SCHOOLS.[1]

ANNIE E. MOORE, Teachers' College, Columbia University, chairman.

During the second year of our work the committee has followed the same general plan that characterized the first. The study of typical daily programs and representative modes of organization of the primary school curriculum has been continued. An effort has been made, however, to secure a large number of observations in schools that are organized and equipped in a liberal way in order that more material might become available to primary workers who are looking for constructive suggestions. In a few cases where new and progressive ideas are being used to modify the formal work in a given system of schools, the supervisor has been asked to furnish descriptions of a morning spent in a classroom representing both a formal and a progressive régime.

One supervisor reports as follows:

Formal Type.—1. The entire group were taught together.

2. The activities were directed in detail by the teacher.

3. On three occasions only did a child do any act on his own initiative; one picked up a pointer, one handed a reading book to a visitor, and the children chose two out of three folk dances during the physical education period.

4. Reading was no more than word calling to the children and to the teacher.

5. The equipment consisted of seats in rows, screwed to the floor; a teacher's desk; and a table on which there were a few books for children, teacher's reference books, and a reading chart in the front of the room.

Informal Type.—1. The children were wide-awake.

2. They had a quiet confidence in their powers and respect for the powers of others.

3. Joy was manifested in doing and in achieving.

4. Resourcefulness was apparent in proposing things worth while.

5. Ability to help one another and to give and take.

6. No suggestion of ugliness or rudeness.

7. The children were happy and thoughtful.

8. Their attitude of mind and their courteous habits reflected the influence of the teacher, who is a woman with a soul and a vision.

9. She realizes that it is her great privilege to teach children to live successfully each day.

10. She sees the tool subjects as one of the means of furthering this end.

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[1] The first report was published in U. S. Bu. of Educ. Bul., 1919, No. 69.

11. She subordinates her personality so that her influence dominates, not domineers over the child.

12. She is always calm and quiet, never raises her voice, talks seldom, and never loses her courteous manner.

A superintendent reports a free period in one of his primary rooms, as follows:

> Two girls played with dolls all through the period. Three boys worked with building blocks. Three other boys drew on the blackboard, one of them spending the entire period drawing houses. The teacher later told me this was the fourth day on which he had thus occupied the entire time. He has very poor control in handwork, but this morning I noticed he could put the chimney on straight. Several girls went to the teacher's desk and got materials for cutting and pasting. Some of them made paper furniture, while others cut from magazine advertisements certain pictures and pasted them in a little booklet. One girl had a booklet full of food for children. One girl wanted to play school, but she could get only a single pupil, and the session did not last very long. One girl printed, and a boy made animals from plasticine. Toward the close of the period one little girl evidently thought I ought to have something to do, so she brought me a book. She said it was a funny book, and that I could read it if I wanted to. Another in a bashful way invited me to play house with her.
>
> One thing that I noticed was that none of them proposed playing the little games they have been taught. When left to themselves they prefer playing games in which they represent real things. The teacher finds this period gives her an opportunity to learn the characteristics of the child as she never did before, which is of course a great help in all her work with the children.
>
> With the exception of the free period, this program does not greatly differ from many other primary programs. An observer can not help but notice, however, a difference in the atmosphere of the room. There is a greater freedom at all times. The children have gained sufficient self-control during the free period so that more liberty is allowed during the quiet periods. There is consequently less restlessness; the atmosphere is more democratic, as petty troubles are referred to the children to settle. The children are more natural at all times and have a happy emotional attitude toward their school.

The common elements in these reports which have collected, and which are most frequently commended by those engaged in this study are:

First. A flexible grouping of children worked out partly by the teacher and partly dependent upon the children's own organization of their work and play.

Second. The need of a variety of material which lends itself to construction and creative work, such as blocks, textile materials, clay, wood, paper, cardboard, paint, crayons, and suitable tools; the children having access to all of these.

Third. Freedom from unnatural, unnecessary restraint, and from formal dictated teacher-control, so that pupils may carry out more individual and group projects.

Fourth. A generous collection of the best textbooks, literary wholes and picture books obtainable, to which children may have easy access, with much encouragement for liberal and independent use.

Fifth. The intelligent and determined subordination of formal drill in the mechanics of reading, arithmetic, etc., to intrinsically worth-while undertakings initiated by children or teacher, or evolved by the entire group, including the teacher.

There is another important point faintly suggested in a number of the reports and clearly indicated in a few, that units of work should frequently occur having sufficient scope to extend over more than one day and calling, therefore, for more sustained thinking, planning, and cooperation. The more sustained and persistent effort of individuals and groups seems most frequently to be called forth by building schemes, construction in wood and cardboard, making and dressing dolls and play with same, the decoration of various articles made, conducting and participating in library clubs and reading circles for voluntary reading, dramatic expression, preparation of a school assembly program, or a party to entertain another group, and making booklets of various kinds.

One unavoidable defect in the plan so far followed (that of getting accounts of a single morning) is that the children often seem to be engaged in activities of a very transitory, isolated sort which may not lead to products of any value, either concrete or intellectual. An account of one morning's work as compared to a large unit of work is very much like the single photograph as compared to moving pictures. In a single photograph we see a static thing; in moving pictures we see the beginning, the development, and the result.

This defect in a brief observation is expressed in a letter from a supervisor who sent one of the best reports:

> One of the weaknesses of the report, I think, lies in the fact that it seems to provide very little opportunity for the clinching of good habits. As natural habit formation is not a question of one day's procedure but must be followed up day after day in a happy, incidental and yet strictly conscientious way, I think that you will agree with me that it is not possible to show this phase of the procedure in adequate measure. In this particular room, however, there are fixed some of the best habits in relation to the very free activities that continue from day to day.

Further on she says:

> The strength of the usual everyday work is its close adaptation to the particular needs of these children. I fear that this report can not show the points that make the work particularly strong, the spirit of service and cooperation among the children. I find, too, that in trying to avoid taking too many notes it is not possible to give the voluntary contributions of the children. They talked quite freely.

In closing, your committee makes the following recommendations:

First. That we select from our descriptive accounts of classrooms visited five which seemed clearly to present as many different types of practice. .Submit these to a large number of school men and women in both teaching and supervisory positions and ask them to grade the work described in the order of preference, calling the example liked best 1, and that liked least 5; and that we tabulate these records and give wide circulation to the results.

Second. Try to discover whether the very formal organization and the mechanical work still very prevalent are due to overpressure in the matter of skill in the formal subjects. To secure data on this, send out a questionnaire aimed to show the requirements for promotion for the first three years. If we find requirements for promotion in schools conducted in a formal way no greater than in those having an informal organization, a partial answer will be obtained.

Third. Secure descriptions of large units of subject matter, projects, undertakings, as actually carried out in schools, and use these to convey more clearly the idea we are working on to those endeavoring to reorganize courses of study and daily programs.

Lastly. Since we have been greatly handicapped by the long delays in getting printed matter into the hands of members, we recommend that the council find ways and means to publish its own reports of studies made by committees doing research or constructive work.

THE WEAK POINTS IN INFORMAL ORGANIZATION.

Dr. Ernest Horn, University of Iowa.

I should like to say at the outset that I am heartily in favor of the substitution of these more informal, worth-while activities for some of the more mechanical and formal activities which have been so overemphasized. I have been absolutely won over to this point of view through being in contact with primary teachers in such schools as Horace Mann, and Speyer School at Teachers' College, Columbia; in the training school at Greeley, Colo.; in the Scarborough School in New York; and in the University Elementary School at the State University of Iowa. All of these schools have shown excellent results from a substitution of these more vital activities for the more mechanical exercises. However, it seems clear that if we expect to succeed ultimately in the complete substitution of these activities for the more formal sort, we must keep in mind certain criteria which must guide us in the selection of the activities which are to be substituted. We can not introduce exercises which teach the child nothing, and expect to hold the support of the public which pays for the schools. The measure of the worth of any exercise is the amount of value in terms of habits, skills, tastes, and ideals which the child learns as the result of that exercise. Let me illustrate.

A so-called "project" which is sometimes found in the primary grades is that of making a paper wagon. As this paper wagon is ordinarily constructed, it is hard to see what a child would learn through making it. It is not made of the materials of which wagons are made; it doesn't look like a wagon; its parts are not like the parts of a wagon; it can not be used as a wagon is used. By such a "project" a child might get a very concrete idea of how wagons are *not* made.

Contrast this with projects which duplicate activities in life outside the school. I have in mind such a project as that of making a bird box. The materials used here are those of which bird boxes are usually constructed; the methods of making the box are the same as those which would be used by anybody; and as a result of the child's efforts a bird box is made in which birds will actually live. Such a project is real and affords a check upon the child's thinking which can not be obtained through so-called "projects" of the paper-wagon type.

It is, of course, not necessary that the children actually construct something. One of the most successful examples that I have seen of good teaching through children's activities was that in a city school where the primary children set a hen and took care of her until the chickens were hatched. Many of these children had never seen a chicken, but through this project they learned quite accurately the lesson of how chickens are hatched.

At this point I should like to warn, particularly, against the tendency to justify make-believe projects by claiming that they develop some general quality such as initiative, observation, or what not. It seems to me that we have here a very bad form of the old-style doctrine of formal discipline, a doctrine which has always been called forth whenever a teacher failed to find real reasons for teaching any subject. Particularly we should scrutinize very carefully any type of activity which is said to develop initiative. We should remember that there are certain initiatives that we want, and certain other initiatives that we do not want. Some of the gravest problems in the education of young people grow out of the possession on the part of certain pupils of highly undesirable initiatives. Such initiatives, of course, must be broken down.

It would be better, it seems to me, for teachers to avoid for the most part, the use of these general aims and to make certain that the projects and free-play activities used in the primary grades are of a sort that seem likely to teach the children important truths in an accurate way. The contributions which these less formal activities can make are too important to be endangered by lack of critical evaluation.

If primary teachers will limit these informal activities to those which are clearly educational, there is no doubt that they will win the support of superintendents and supervisors and of the patrons as well.

STRONG POINTS IN FORMAL ORGANIZATION.

Miss Catherine Watkins, Washington, D. C.

I feel that kindergarten and grade teachers are facing exactly the same problems to-day, and I am glad that this is so, because it shows that we are drawing together upon the same big basic principles.

In discussing formal and informal organization I feel that the question should not be presented so as to suggest irreconcilable opposition, for, while I hold to the necessity for a certain degree of formal organization, I also believe firmly that this is not contrary to or destructive of the type of organization which arises out of or is grouped around children's purposes. The child's experience contains within it the same element as that of the race; therefore there can be no conflict in kind. As Prof. Kilpatrick states, "since the whole fabric of institutional life grew out of human interests the path of the race becomes the possible path for the individual."

I hold that it is the special office of the teacher to see that this path which the race has followed, which to-day is differentiated and classified as subject matter—this racial heritage which belongs by right to every child—is presented to him and presented in such a way that it may become his possession. This is my first point, therefore, in defense of the organization of subject matter—that it *provides equal opportunity for every child* to enter into the best which the race has thought, felt, or achieved. It is the first and most important duty of the schools to see that this heritage is passed on to the new generation and is not left to chance, to incidental, casual choice on the part of either child or teacher.

If organization were of the informal type only, growing always out of the child's purposes, development might reach a high level in schools where the teacher knew how to lead on, where she understood just when to present the necessary subject matter in relation to the children's interest. In other schools, where the children would have an equal right to demand the same enriched experience, their own limited outlook and the lack of power and insight on the part of the teacher would defraud them of their heritage. Organization of subject matter would make this state of things less possible, for it *conserves values* and *passes them on.* Again, organization preserves balance; it prevents the teacher who can do one thing exceptionally well, or who sees one subject as especially important, from overemphasizing that particular subject or activity to the neglect of others equally important. In subject matter itself organization tends to assure a better scale of values, the less important subjects being subordinated to those demanding more time. The danger of informal organization is to accept all purposes as of equal value and to allow the immediate interests of the child to determine his selection, even on planes where his limited experience makes profitable choice impossible. The maintenance of balance insures for the child a more all-sided development and growth.

Third. *Organization helps the children to see "scattered facts in significant relations,"* and thus leads to a *more logical type of thinking.* Little children flit from one purpose to another, and they need the more mature mind to guide them into larger units of thought and wider, more far-reaching relationships. The teacher is also helped to see the child's isolated acts in relation to the whole process of growth and thus to evaluate them wisely. By seeking the whole she would know how to suggest the next progressive step.

Fourth. Subject matter which is organized on the basis of the child's interests and needs *gives the proper direction to these interests* by furnishing appropriate stimuli to call out certain approved responses. This presupposes that the organization has made provision for avenues of expression other than the traditional three R's, lines of activity natural to little children; for example, every child loves to talk and to listen to stories; to dance and to sing; to imitate; to construct; to paint and to draw; to ask questions. Now an organized curriculum should guide these activities and instincts into right channels by extending the child's knowledge of things already in his experience, by giving new experiences to stimulate and enrich his original purposes, and by suggesting social aims.

We can not expect to secure the highest type of growth or of development if we leave the stimuli for children's purposes entirely to incidental, chance happenings, or to their own limited experience.

Fifth. Organization of procedure *prevents waste*—waste of time and effort. In the purposes of little children there is frequently much repetition. This is perfectly legitimate at first, but when it ceases to be delight in a sense of power over materials, or of mastery over previous difficulties, it becomes waste of time, because the child never really progresses. It reminds me of the story of the old darky riding for the first time on a merry-go-round; he became so enchanted that he continued to ride and ride until his wife, who was standing by, pulled him off, saying, "You've rid and rid, but where has you got."

Dr. Dewey says "continuous initiation, continuous starting of activities that do not arrive, is like forever tasting and never eating."

Organization, by giving definite goals, helps both the child and the teacher *to arrive.*

These are the main points which I would urge as important for us to bear in mind, and in submitting them I wish to add that I believe all organization of subject matter and procedure should be so elastic that it may be adjusted to fit individual conditions and that both teacher and child should be free to carry out self-initiated purposes. It is possible even where there is formal organization for the teacher to guide without overpowering, to present a rich variety of stimuli without insisting upon uniform response, and to hold consciously to educational standards and values without external imposition.

If we try to keep the child, his powers and his growth, in the forefront of consciousness, subject matter and procedure will necessarily be subordinated to this central thought, even where the organization is formal.

REPORT OF THE COMMITTEE ON FURNISHINGS AND EQUIPMENT FOR PRIMARY SCHOOLS.

By the chairman, ABBIE LOUISE DAY, University of Nevada.

We have at last reached a stage of development where we realize that material surroundings influence our intellectual attitudes. I believe there is not a teacher in the room who does not realize that her environment determines in a great measure the character of her work.

Some two years ago when we were planning a program on "Free Work in the Primary Grades" what had seemed to be a side issue I found to be a very important factor in the realization of our ideal. How is the teacher to do all this free work? How is she to give the child an opportunity for initiative when she is provided with seats screwed to the floor in rows, with a desk having perhaps one large drawer and two smaller ones at her side, and with as much as 9 feet of shelf space to put material on, and that shelf is in a little cupboard where she keeps her hat and coat and is accessible to the teacher only? So we sent out questionnaires over the country asking teachers what they would like to have, what they needed in the way of equipment and materials in order to make the primary classroom what it should be for the fuller development of the children.

School principals, boards of education, and superintendents of schools are very much like the man in a family I once knew. The wife struggled with her husband and the plumbers for six weeks before she could get them to place the sink in the kitchen at the proper height for a woman. We are going to struggle for more than six weeks; we are going to keep on struggling until we have classroom furnishings to fit the workers.

Mr. Cooper, the Boston architect, who is chairman of the national committee composed of many leading men in our country who are working on the standardization of school buildings, said to me, "Miss Day, we have been looking around for women who will give us information on what they want." I told him what we had gathered. "But," I said, "this is only a small report, and we want to secure the ideas of all the teachers in this country that we can possibly reach."

We sent out more questionnaires, a complete report of which we made at Chicago last February. There are 10 items in this questionnaire which were practically unanimously agreed upon by people throughout the country, not only by classroom teachers, but by men in colleges of education who have come in contact with the classroom teacher and realize what she most needs. We are hoping that you will ask your superintendents and school boards that they provide at least these 10 important necessities.

QUESTIONNAIRE ON FURNISHINGS.

Primary classrooms should be furnished with at least the following equipment within the room: (This list is merely to stimulate ideas.)

1. Cupboard shelf space (below 4 feet) 36 inches by 18 inches by 9 inches, for each child in the class.
2. Additional shelf space for general materials, 30 feet by 18 inches.
3. Work tables or drop-leaf work shelves.
4. Two sand trays (12 by 36 by 6 inches each) on one rolling base.
5. Movable furniture:
    (a) Chairs and tables.
    (b) Movable desks.
6. Toilet, lavatory, soap, and towels.
7. At least 96 square feet of swinging display boards.
8. Library bookshelves and a good collection of story and picture books.
9. Materials and tools to work with building blocks, rubber type, etc.
10. Free floor space at one side of room for constructed projects.

I should like to know how many State chairmen there are present in this meeting. If you are a State chairman, will you please stand? (State chairmen from Indiana, Rhode Island, Michigan, and Minnesota responded.)

I am glad to know that we have at least four present. Will each of you here present go back and work with your State chairman on this matter? One woman said to me, "Why! We sent out these questionnaires, they have been published, they have gone all over the country, what more is there to do?" How many of you have noticed any change in the classrooms since the meeting in Chicago? Now, this is where you must help. We must keep on "struggling," and I want you to know that superintendents throughout this country are most eager to receive from you your suggestions as to what is needed. Letters come to my office day after day saying they are to put up new buildings and asking us to give them suggestions. They are just like the good husbands who find out what their wives want. If it does not cost too much (we have to be careful of that) the wife usually has it, if she really needs it, if it is important. We stand in that relation to the public schools. The superintendent and the school boards are the fathers of the schools and we are the mothers. It is for us to suggest the needs to be met on the housekeeping side, the things that are most essential, shelf space, where children can put materials, where they can go and get materials without disturbing each other, without getting in the way of each other. An abundance of material is needed with which to construct something besides paper wagons, with which the children can continue their activities, and above all a free space in which to move about and work.

Little children do not flit in interest from one thing to another if they have anything worth while to do. They will work upon one project for a week at a time if the thing is of interest to them, and they will grow and learn from that continued activity. But what fun is it to start building, get half through, and the day ends? They have to muss the structure all up and stack it into boxes or put it into the cloakroom where all the children trample over it. Next morning it is not in fit condition to continue work upon.

Recently I talked with one teacher who is trying to do something for the children besides putting them into their seats, thrusting a book into their hands, or compelling them to sit with hands folded. She had quantities of material stacked on the shelves and floor of the girls' cloakroom so that when the children went home at noon and at night she had to hand out their wraps. She was working under difficulties, but she was succeeding to a remarkable degree. At the front of the room six seats had been removed and the children had space in which to construct and to play free educative games.

I have come to you asking you to work throughout your State. Some of the State chairmen have written to me asking what they can do. Get teachers to suggest what they would like to have, what seems absolutely essential for a classroom. Send out your questionnaires, send out your suggestions, and we of the general committee will be most happy to help you in whatever way we can to collect the data of the work done in different States and distribute it from one State to another, if you will but send it in.

Last June we felt that this work was greater than just the first three grades, that it needed to reach from the kindergarten through the universities. So we asked the department of elementary education of the National Education Association to appoint a committee to work in conjunction with our committee to determine what should be the equipment and the furnishings for the four upper-grade classrooms. Their aim will be to bring about those changes which the classroom teacher feels absolutely essential. We also requested at that time that the kindergarten department do a like work. Miss Lovett, of the Milwaukee Normal, who is chairman of the kindergarten committee, has sent out a number of questionnaires, and the committee is compiling suggestions on what should constitute standardized equipment and furnishings. I will read some of the suggestions of her committee:

First. Number of children for two teachers, 30 to 40; that is the maximum.

Second. Space, two rooms, with accordion doors.

Third. Location and equipment: They ask for porch, windows, cupboards not higher than 5 feet that the children can reach easily, and storeroom. Rooms lined with shelves, blackboards in the kindergarten, display boards, shelves for books and treasures—all of you know of the treasures the children bring to us and which we surreptitiously put into the waste basket the next day or two, hoping the children have forgotten—cloakrooms; toilet and lavatory.

STATEMENT BY THE COMMITTEE ON ELEMENTARY EDUCATION.

By the chairman, Miss THEDA GILDEMEISTER, of Minnesota.

The members of our committee were called together at the close of the July meeting. Miss George represented the western coast and Miss Payne, of New York City, and I represent the middle section. Our report will be ready at the next meeting of the superintendents, and I can make a partial report only at this time.

Miss Payne is collecting photographs of elementary school equipment and furnishings from different schools in New York City. She is also collecting data from teachers in regard to the things they most need in their schoolrooms.

In Minnesota I am also collecting photographs and blue prints. with descriptions of various new school buildings being erected there. The teachers in Minnesota have a voice in the matter of buildings and equipment for the schools in that State, and we expect to submit a full report at the end of the year.

SPECIAL REPORTS ON DAILY PROGRAMS IN VARIOUS LOCALITIES.

The following report by the research committee of the kindergarten-primary section of the Michigan State Teachers' Association gives observations in the first grade in a city public school.

REPORT X.

EQUIPMENT.

Flag (4 by 6 bunting).
Folding table (brown).
Chairs (rubber tips) brown.
Large light room, 7 windows (4 north, 3 west).
Ample blackboard space, low boards, picture rail.
Thirty framed pictures—(change 3 times a year, 10 up at a time).
Building blocks (aeroplane, wood, stone).
Work bench, movable (36 by 24), with vise, saws, hammers, wood, nails.
Toy box (large)—large printing set (inch type), scissors, water colors, paints, brushes; colored crayons, paste, pins, tag board, milk bottle tops, clay; spool, large, small; collar buttons; colored paper, large, small; colored mounting paper, paper dolls, dolls to dress, cloth for dresses, needles, thimbles, 2 balls, 12 bean bags, 2 tinker toy sets, dominoes.
Seesaw.
Desk with bench at back of room for children.
Wardrobe cupboard, low shelves.
Twenty-five books—primer and first reader.
Low table—sewing, parties, lessons in placing a table.
Shelves for material and books.
Window box.
Doll house (6 rooms).
Flagpole (8 feet) on block, movable, raise a small silk flag at opening of each day; also used for May pole in spring.
Manicure set.
Musical instruments, Victor machine (20 records), clappers, 3 sets of bells, triangle, xylophone.

ENROLLMENT 29, AVERAGE ATTENDANCE 24.

Percentage of time given to undertakings which initiate 62 per cent.

First bell, 8.10 a. m.—Children came in, looked about, found things cared for—plants and garden watered, window sills, desk, and bookshelves dusted, books rearranged on shelves, flagpole arranged for flag salute, etc. They visited with each other over happenings of the night before. Some selected materials and placed them at their tables. Some practiced new songs on xylophone. Some read what was on board and played school with word cards and books. Two girls unpacked their sewing bags and threaded needles ready for sewing.

Last bell, 8.30 a. m.—A boy scout raised the flag on the pole in front yard, a child raised our flag in our room. We all stood at "attention" while the "Star-Spangled Banner" was played and then gave the flag salute.

Children gathered together in a group on the floor. Roll was taken. (Children answered in various ways, by giving father's or mother's full name, their street and number, name and street of school, etc.). We talked about absent ones; if ill, what could be done for them; if away, they might see. Talked about the weather, and how it differed from previous months. Marked off the day on calendar. Children discussed plans for the day, at school and at home, what they intended to construct, etc. Some asked for materials which they had not found. Three boys were told by children that their feet were muddy; they left the room. (At least once a week we have a lesson on care of finger nails, when each child cares for his own nails, a splendid opportunity for talks along many health lines. Each child used his nail stick (skewers from the meat shop), which he had sandpapered, and his own nail board of fine sandpaper. We helped each other with the cutting of right-hand nails. (*Time, about 20 minutes.*)

B Group—

Phonic and reading preparation (primer). Children brought their chairs to the place they preferred (sometimes they prefer the cloakroom).

A Group—
- 3 boys worked on bird houses in hall.
- 2 girls sewed on dresses for dolls.
- 1 boy took nailbrush and soap to basement. When he returned he cut, filed, and polished his nails.
- 1 boy built an airplane with Tinker Toys.
- 1 boy built barn and a fence with wooden blocks.
- 2 girls read from new books.
- 1 girl dressed and undressed our dolls, trying on all the clean clothes.
- 2 girls furnished a "shoe-box" room for paper dolls they had made the day before.

(*Time, about 20 minutes.*)

Each child found something to do. He was drawn into some kind of group project, usually by its attractiveness if he had no plan of his own.

A Group—
- Phonic and reading preparation.

B Group—
- 3 boys worked on furniture in hall. (They had separate places on shelves for work not complete.)
- 4 children drew with colored crayons.
- 2 girls sewed on bags they were making for their sewing materials.
- 1 boy sat on floor and listened to A Group reading.
- 2 boys built houses with stone blocks.
- In different places on the floor children arranged the furniture which they had previously made in rooms. Finally they came together, each with his own contribution, placing the rugs and furniture together for one complete house, thus bringing the "whole family home to live together."

(*Time, about 20 minutes.*)

B Group wrote on board.
A Group sat on floor, observed, and suggested.
A Group wrote on board.
B Group observed and suggested.
(*Time, about 15 minutes for each group.*)

Recess and physical training.—About 5 minutes for new directed games.

Children asked for Maypole dance for several records. Each worked out his own free rhythm. Band director and children to play in band were chosen—3 sets of bells, clappers, triangle, drum being used. Band played with Victor machine. A march was asked for, a leader chosen—formed in single line, then in 2's, 4's, and 8's, pivoting in center of room. (This was suggested because of pageant work of upper grades.)

Children asked to rest, each took his own comfortable position, some lay or sat on floor, some took chairs.

(*Time, about 20 minutes.*)

B Group—
- Reading.
- Chose to read in cloakroom.

A Group—
- Same 3 boys continued work on bird houses.
- Same 2 girls continued sewing on dresses for dolls.
- 3 boys drew pictures on board.
- 2 girls continued work on "shoe-box" house. (They asked a boy to help them cut windows and doors.)
- 1 girl worked on her nails.
- 2 came to the B Group and enjoyed reading.

(*Time, about 15 minutes.*)

A Group—Reading.
B Group—Same 3 boys worked on furniture in hall.
- 2 girls continued their sewing on bags.
- 3 children wrote on boards.
- 1 boy bounded ball in wardrobe.
- 2 read books from shelf.
- 1 child listened to the A Group story of "The Three Bears."

(*Time, about 15 minutes.*)

Children recited "The Swing"; also requested the reading of the Garden Poem by the teacher.

DISMISSAL 11 A. M.

First bell, 12.55 p. m.—Many of the children were quiet at this time, some sleepy—seemed to be a rest period with most of the children, and yet "house" and "school" were played by some. Many were content to watch.

Last bell 1.15 p. m.—Children gathered together for music and chose their own songs.

B Group—Reading.

A Group—

Part of group continued work of morning; others began new projects. (There are always leaders among the children, and while work is not really copied, good things come through suggestions.)

(*Time, about 20 minutes.*)

A short period of rest on the floor.

A Group—Reading.

B Group—

Now that the children have some power to read by themselves, the book shelves are much used, with noticeable results in class. Many of the children have learned to knit. Chains made of coarse yarn, knitted with the fingers, were used to play horse.

(*Time, about 15 minutes.*)

Recess. Games Rythm. Out Door.

Drawing—Here I find my greatest problems. The outline is very helpful, but sometimes too difficult, not functioning in the children's projects. (There will be no drawing outlines in this grade next year.) (*Time, 20 minutes.*)

Story time—Bird stories were told and retold.

Dismissed at 3 p. m.

DISCUSSION OF THE REPORT.

Mrs. DUDLEY. Three years ago the executive board of the Michigan State Teachers' Association suggested that the future activities and programs of the various sections of the State organization follow some line of research work. In accordance with this suggestion the kindergarten-primary section appointed a research committee.

It so happened that several members of this kindergarten-primary committee were also members of the National Primary Council. We came back from last year's meeting in Chicago inspired by the work being carried on by the National Primary Council, and inspired with a great desire to get this good work over to every primary teacher in Michigan. We had in mind not alone the teachers in the larger centers whose supervisors could carry it to them, but the teachers in the smaller towns as well and the teachers in the rural schools.

The research committee undertook to find out the conditions existing in primary and kindergarten schools of our own State with the purpose in mind of assisting in any way possible to remedy conditions where they needed to be remedied.

In accordance with this purpose, the first questionnaire sent out had to do with number enrolled, equipment, the content of a day's work, and the problems in connection with supervision of special subjects, such as drawing and music. We have been especially interested in the last-mentioned phase of the primary school problem.

We are certain that in our smaller towns, and larger towns, too, there are many teachers who are unable to carry out the most desirable types of work because of unrelated problems imposed upon the groups by special teachers; also because of the lack of assistance from special teachers in carrying out problems growing out of the child's own interests.

Reports came in from all over Michigan. The committee selected five which they thought would be most helpful and suggestive to the teachers of the State. Report X, which we are happy to learn the Primary Council considers a helpful one, is one of the reports obtained by this committee. It, with three others, was published and distributed at the 1919 meeting of the Michigan State Teachers' Association in order that every primary teacher who came to that meeting might have some of these things in tangible form to carry back, not only for her own benefit but for her superintendent also.

Report X we felt to be a significant report because of two features. First, the part of the day's procedure which the average teacher is most inclined to emphasize is the so-called recitation time. You will notice that the teacher of Report X in several cases merely mentions her reading class, while she spends a paragraph in discussion of what the children were doing out of recitation time, what they were doing when they had opportunity to initiate their own activities. We were happy to know that many teachers of Michigan were realizing the value of that side of their work.

There is another significant feature in the report. The teacher, because of supervisory influence, or because of her own feeling that it must be so, had devoted a regular period to reading, reading which came through a formal textbook. She said, "Spent about 15 minutes reading" (reading from a certain text). She still found opportunity for children to engage in projects of their own planning. The significant point there was the fact that even though a teacher had a certain amount of subject matter which she must cover, even though she must devote certain time to subject matter which was definitely assigned to be covered, it was still possible for the children to be engaged in a great many other activities; worthwhile activities of their own choosing and planning. I believe all of us have met the teacher who excuses a cut and dried, teacher-directed program with "I can't do any of the project work because I have so much reading to accomplish." I know personally the work of the Report X teacher. This last fall her reading, too, has become an activity.

One of the features worth mentioning in connection with this bit of research work is that our Michigan State Teachers' Association furnished the money to carry it on. After a number of committee meetings we realized keenly that we were hampered because of the lack of money—money for the publication of reports, means of financing meetings, and so on. We simply wrote to the executive board of our State association, outlined to them what we were trying to accomplish, and asked for a start of $100 for the work. They gave it to us. The work of this committee is being continued this year, and it is being continued under the financial support of the Michigan State Teachers' Association.

Miss GAGE. The inspiration that was the outgrowth of the meeting at Chicago last year, the inspiration and help that came at that time was carried back and this fall approximately 19 first grades have been assigned, as an experiment, and are to have a public school superintendent and public school supervisor. This seems to me to be a compliment to the National Primary Council.

Miss Shaw, at present assistant superintendent of Kalamazoo schools, could tell you further of this.

Miss SHAW. The inspiration, I think, for this work came from two sources. The National Council has probably done a large share, and we have had wonderful cooperation from the general supervisor in our city, who understands what should be done and what equipment we should have in our first grades. What we call our "cradle roll" has been turned over to the supervision of a competent kindergarten teacher, Miss Raymond, and the work there is of the informal sort.

We were at first given only a half year for this work; that is all the superintendent of all schools was willing to allow. Reading is coming along in spite of it, no formal work at all, but they read and read and read. In as much as we got that half year, we are going to prove that we can do in three semesters what was done formerly in four.

Supt. PERRY, of Massachusetts. Two years ago this spring I had a conference with one of our progressive primary teachers on this very subject, and the outcome of the conference was that she agreed to go to Teachers' College, New York City, for the summer, and I agreed to equip the room. I agreed to do more than I thought. I did unanchor some of those seats you have told about that are screwed to the floor. I purchased some linoleum, to make a playroom, and I had to pay $100 for the linoleum we put down. I say this as a warning to the rest of your gullible superintendents.

The program that we put into effect did not vary much from the regular school program, something like the one that was read here. We did have a period from 11 to 11.30 on the program as a free period, where the children took the initiative and did what they had a mind to do. They did not set any hens as I recall. If they had I am not sure where the initiative would have been. I am sure the initiative would have been outside the teacher, and some outside the pupils in that particular project.

Did that amount to anything as far as the whole day's work went, just half an hour? Was that worth while? Did it make much difference? It did. It changed the whole day. The whole spirit, the national spirit of that room was changed on account of that one half hour of freedom, you might say. In the first place, it gave the room a more natural environment for the child. The teacher told me, when the children came to school in the fall, it was the first time in her experience no child cried the first day. These children had not had any kindergarten experience previous to coming to this school. The same thing happened last fall. That gave the teacher a splendid opportunity to protect the children's natural impulses, and, to some extent, to build upon them. She did not get much chance when teaching 40 children all in one group, all doing the same thing at the same time under her direction. Then it gave a chance for the development of the social instincts of the children. You would find children helping each other, a thing frowned upon in the formal school, but there they could do it in a legitimate fashion.

Now I get down to the main point. There is a general freedom allowed in the primary department. If they don't want to read, they are not compelled to read. That seems very radical. Some superintendents say, "How far are you going to carry that?"

We had in February two children who had not yet begun to read, and the teacher tells me she had never promoted a child in other years unless they have gotten a pretty good start by January; if, for instance, they are out on account of sickness or for other reasons and have not got started. These two children had not begun to read in February, yet they had no trouble when they got to a point where they wanted to read, and read enough so they were promoted without any difficulty at the end of the year.

Another striking case: A little boy, the youngest in the room, an immature child, did not want to read until April, and in April he "felt the need" for reading and asked the teacher to allow him to take his book home and read to his people, and that child is in the second grade this year and doing the work there.

I think the matter of school discipline should be made more democratic. I heard Thomas Mott Osborne, the prison reformer, say that when his boys got large enough to go to school he could find but one school in the whole country which would tend to prepare them for their duties as citizens, and that was the George Junior Republic. When he mentioned they were going there, their grandmother held up her hands in horror. There the discipline is more democratic, for they allow the children to settle their own petty troubles.

This morning the speaker said that the best way to secure discipline was to stop disorder before it occurred. I have thought that was a very good way myself. It seems to me we should let crises occur in school and teach children how to meet crises. Better let a crisis occur where it can be settled under the guidance of the teacher, rather than be settled by the children alone, and perhaps often in the wrong way.

Those are some of the things we have found in that room as the outgrowth of this experiment.

REPORT C-2.

Supplementing Report C, 1919, on "A Day's Work in a Primary Room," N. C. P. E.

This summarizes briefly the purposes and results of a year's work by a group of children in the room observed in Report C, 1919.

A STUDY OF THE FIRST GRADE.

The year's work herein outlined was a study made to determine to what extent and with what results the newer educational theories as they affect the organization of the curriculum and the daily program can be successfully applied and practiced in a typical primary class in a city system. The individuals making the study accepted the usual conditions existing throughout the system, i. e., (1) responsibility for definite accomplishment in subject matter, (2) schoolroom equipment, (3) number of pupils in class, (4) mentality of pupils in class, (5) general school organization. Those making the study were left entirely free in the matter of time allotment on the daily program and methods of procedure.

The group at work was observed at intervals during the year by a committee composed of six elementary school principals, each with his primary teacher, the primary supervisor, and the district superintendent. This observation was made at these intervals: First visit the first week, second visit the ninth week, third visit the nineteenth week, fourth visit the thirty-ninth week.

CONDITIONS ACCEPTED.

Composition of the class group.—The usual promotions throughout the school occurred in January, 1919. The 56 pupils recommended for promotion from the kindergarten to first grade were divided into two groups; 23 formed a beginner's class in another primary room, and 33 formed the group for this study. To these 33 were added 4 first-grade nonpromotions. During the year additional pupils entered this group: 1 from a parochial school, 1 from a private school, 1 from another public school of the city, 6 from the group of 23 mentioned above. The total number of the group for study was 46.

Withdrawals during the year occurred as follows: 5 left the city in June, 1919; 1 left city in October, 1919; 1 was sent to private school upon the advice of teacher and principal; 1 entered an orphanage.

Nationality of group.—All American born, 39 born in the city, 7 in other States.

Attendance.—Normal.

Community.—One of comfortable apartments and small homes, and small retail shops. A community better than the average in material opportunities.

Physical equipment.—Room 31 by 24, lighting of unilateral type. Blackboard on three sides of the room.

Seating.—Moulthrop chairs, 2 school-yard benches used for work benches.

Bulletin boards.—Home made, a type adjustable to any height, and sufficient to display class exercises for class criticism.

Reading chart. Price marker with large and small alphabet and figures. Tools—saws and hammers. Paste and scissors. Rulers. Printing set, rubber type. Balls--large and small. Mother Goose games. Punch. Dinner gong. Hill floor blocks.

Accidental equipment of toys, games, books, etc., loaned at intervals by pupils of the group.

School supplies—paper, pencils, colored crayon, clay, etc.

Wood—discarded fruit crates and boxes donated by shopkeepers. Nails, stains, paints furnished by the children who used them.

Text—Primers and First Readers.

Supplementary—Miscellaneous supply.

School sessions—A. m. 8.45 to 12, with one 15-minute intermission; p. m., 1 to 3.20, with one 10-minute intermission.

School subjects—Reading, writing, spelling, phonics, language, music, drawing, numbers, physical training.

SOME FUNDAMENTAL PRINCIPLES UNDERLYING THE STUDY.

1. School Is a Miniature Society.

(*a*) Laws of society arise in response to a need; therefore rules for the schoolroom were made as need arose. An example: When the weather necessitated more outer clothing, an increasing confusion became noticeable when children went to the wardrobe for wraps. One child's suggestion for relief from the confusion was accepted by the class. It was to choose one of their number each week to stand at the wardrobe door as "traffic officer," whose duty consisted merely in standing there, for the rule was established that children would enter passing behind him and leave passing in front of him. After several weeks of such practice one child suggested that as every child knew which way to go there was no further need for the officer, and the office was discontinued.

(*b*) Interdependence and not independence is the proper relation to exist among the members of any society. Numerous occasions gave opportunity to develop an appreciation of this principle.

Example. The teacher and children went to see men at work building a house in the neighborhood. The teacher called attention to the fact that each man had his own work to do, inasmuch as some dug the cellar, some carried bricks and mortar, some laid bricks, etc. In using the Hill floor blocks, later there was evidence of greater cooperation among the builders, some children showing a greater willingness than they had shown before to fetch and carry, or to give up an individual project in favor of a larger class project.

(*c*) A democratic society should recognize superior ability among its members and acknowledge such by conferring leadership. The leaders should realize and accept the responsibility that superior ability entails. The children of this group showed a developing of the powers of discrimination by seeking help when in need of it from those who had established themselves as proficient in the various activities of the room.

2. The Whole-Hearted Purposeful Act is the Most Effective Unit of the Educative Experience. This Implies That the Purpose Must be Defined and Recognized Before the Activity is Entered Upon.

There was a definite daily period when children chose their tasks, made and executed their own plans, and judged of the excellence of the product; this was the only guaranty that activities engaged in were really whole-hearted and purposeful. In the first few weeks there was a daily getting together after this period for the purpose of giving to each child an opportunity to show *what* he had done, *how* he had done it, and *whether* or not it worked. The teacher's purpose here was to crystallize public opinion in favor of worthwhile activities as opposed to dawdling. The fruit of this "get together" procedure was made apparent by the fact that soon no individual, or group of individuals, could pursue an unworthy activity without encountering adverse criticism from his mates during the period. Therefore the daily getting together was discontinued, but later whenever the teacher saw in any activity entered upon by the children an opportunity to aid the children to see more clearly what constituted worthwhile and truly purposeful work, she called the group together in order that the class individually and collectively might have the experience of weighing and determining to what extent this activity under consideration furthered a worthy purpose. In order to enable the children to form correct and definite standards of "worthwhileness," it was necessary to bring before them for their consideration both purposeful and purposeless activities. No activity was held to be worthy that did not serve an educative purpose in the broadest sense of that term. The welfare of the group as a whole was a basic factor in weighing the worth of any activity undertaken.

The values of the free period were incorporated in other work of the day. Conscious effort was made to extract from every interest which arose among the children all the leverage which that interest would afford in promoting progress in the regular school subject; for example, parties undertaken by the class necessitated writing and reading letters of invitation; preparation of the entertainment involved reading, language, dramatization, numbers, music, drawing, construction work, etc.

3. *Individual Differences Must be Recognized in the Educative Procedure.*

All encouragement was given each child to progress at his best pace in the school subjects. An example taken from spelling: Each child was given a blank book in which he inserted all the words which he had learned to spell. Results showed every degree of attainment, the most marked contrast being between the child who learned only the words assigned for the year and two children who learned four times that number.

4. *Activity, Not Passivity, is the Keynote of Child Development.*

Activity is both mental and physical. The mental aspect of activity is prominent in learning to read. The teacher's obligation and responsibility, it must be remembered, was to achieve results in ability to read. To do this with the least friction and waste, it was necessary to create and to stimulate the desire to read. All legitimate means were used to lead the children to recognize that reading was both pleasurable and useful. These are some of the means employed: Teacher read stories aloud, children from other rooms and higher grades were invited to read, the best texts were provided, technique was subordinated to thought getting, wide latitude was given in children's choice of texts that were furnished. An opportunity to work with children of like ability, which small grouping allowed, constantly stimulated the reading interest. As the desire to read was awakened, it was apparent that the children looked upon the teacher as their ally in furthering this aroused purpose.

The recognition of this principle of activity versus passivity gave the schoolroom the sound and appearance of a busy workshop, in contrast to the traditional schoolroom with its "set task sit alone at your own desk" procedure.

5. *The School is Responsible for Desirable Character Formation.*

Character is manifested by one's reaction to life situations. The citizen of desirable character is one who can face a situation and react properly to that situation—that is to say, he has full command of himself; he must have the ability to survey a situation, to determine the proper course of action. A course of action having been decided upon, he must have the disposition to act in accordance with his decision. The school environment furnishes, through the apparently insignificant happenings of its routine, a rich field from which we can provide opportunity for the children to face real life situations and under the teacher's guidance to react properly to such situations. Example: In the middle of the year a boy who had frequent conflicts on the playground came into the group. Following these conflicts complaints were brought to the group either by the boy or by others against him. These complaints opened the way to direct the attention of the class to their responsibility for seeing that children on the playground met with fair play. Under the teacher's stimulus the children undertook to investigate the cause of the frequent quarrels and to bring the offender to justice. Inasmuch as the quarrelsome boy was not always the offender, these occasions were excellent opportunities for demonstrating the necessity of going deep to get at the cause of trouble. Therefore, instead of being a drawback to the discipline of the school, this boy was the means of unifying and clarifying public opinion on matters of such a nature.

RESULTS.

The achievements of this group were entirely satisfactory. The obligation to cover the ground prescribed as the year's work was more than met. Evidence of this accomplishment was more convincing during the latter half of the year than during the first half, for in the early weeks accomplishment in subject matter was held subordinate to the establishment of such fundamental virtues as habits and attitudes; once established, these habits and attitudes minimized the effort necessary to accomplish the subject matter. Growth in habits and attitudes was slow but sure. For example, the teacher, in order to give opportunity for the development of responsibility, occasionally left the group alone in the classroom. At first there was abundant evidence that behavior was affected by the teacher's presence and influence. Later, growth in this respect had reached a point where the teacher's influence and presence were less felt, and work progressed under the influence of a conscious recognition of responsibility. During the last half of the year there was unmistakable evidence that the class was indifferent to any influence except that of worthwhile purposes that gripped each individual. There is not the slightest doubt but that this manner of handling the beginners has established habits of self-control, self-reliance, self-respect, and courtesy more strongly and with greater genuineness than any other method of procedure heretofore followed.

DISCUSSION OF THE REPORT.

Miss **Brady**. Madam Chairman, it seems to me there is very little needed to be said, as this leaflet practically tells the story. It was not possible, however, to put into the leaflet in detail the gain made by the group of children in their formal school work, the regular school studies. It was the consensus of opinion, however, of the members of the committee who observed this work throughout the year that these children had done a great deal more than the course of study called for in the regular school work. In the growth of right social relations we felt there was the greatest and most important gain. The attitude of these children toward the work, toward each other, and toward the children in the schools with whom they came in contact seemed to us to be the thing most worth while. The gain which the children made in the regular school subjects might have been made under the direction of any primary teacher in the ordinary primary school way, but the habits and mental attitudes of these children we were sure were the result of this kind of procedure. They were the outcome of a very definite condition in the mind of the teacher. An essential part of her purpose was the purpose of the children, and an essential part of her purpose was to develop just these habits and attitudes that we talk about here as being the things that after all were most worth while.

Miss **Ernst**. I would like to call the attention of those interested in change of procedure, from the standpoint of teachers and standpoint of superintendents, to what the conditions were that were observed by the people in this work. We come from St. Louis, where "organized" is printed in big capitals. We had to cover the ground, and we had to do it with the equipment of the room as it was. It happened to be a number of chairs, a wooden bench, and the ordinary school supplies. The youngsters supplied the needs. They had five or six Moulthrop chairs; so those youngsters, realizing they could not entertain a lot of people and use Moulthrop chairs, made some chairs out of soap boxes. I have sat on the chairs they made.

The first chair made in that room was made with the back built out of a piece of stuff—I don't know where they got it, but it had an oblique nail sticking out just in the middle of the back, and all who sat on it—it was particularly the teacher's chair—did so very gingerly, but nobody said a word about that nail. That nail stayed there a couple of days without anybody speaking of it. Finally, a child noticed that the teacher might tear her dress on the nail. But the head was slightly embedded, and the job of getting it out lasted several days. Finally they got it out, and nobody gave the slightest suggestion as to how to do it. But that isn't what I want to talk about.

The conditions were exactly those of the ordinary school in a normal town like ours, 46 children taken care of in the ordinary schoolroom, and 2,000 of us have such schoolrooms. The teacher, and here's the important point, was a first-grade teacher, and she had been a teacher years before when the program called for formal organization and had made the work go. Something happened to her; I think it was Primary Council probably indirectly applied. She got a new purpose and she did what thousands of school-teachers in this country can do. She discovered the new purpose was worth while and found her footing in it, using whatever material she had. She got busy on it and has done the old job in a new way.

May I call attention to the report in another particular? It is implied that propositions must be planned before activities are entered upon.

I think you will recognize the possibilities that are there suggested, how in the ordinary schoolrooms, in the ordinary course of study, or rather demands of the course of study, the teacher can find her footing; she will find adjustments can be made perfectly well. She won't need $100 for linoleum. She won't even need $50 for Patty Hill blocks. We do need a teacher who is sure that there is something behind the new procedure.

It all depends upon the viewpoint of the scrutineer. Watching it constantly, we could not pick a flaw, and some of us were hunting for the flaws. We could not pick a flaw in the ordinary subjects. Those youngsters can read, can spell, can write, can do numbers. And they can keep their accounts perfectly straight on thrift stamps, picnic tickets, entertainment tickets; anything that needs to be done those 6-year-olds are perfectly able to do, and they keep the accounts from day to day.

The most remarkable thing in my judgment about this experiment which we were watching for a year was the social result. I never expected to see such perfect social adjustment in a group of 46 children as I have seen in this group. There was not a single child at the end of the term who was unfairly individualistic, who was selfish, who was unable to sit down with his fellows in the planning of a proposition and take the subordinate part if that was what fell to his lot. It was the most remarkable example of a year's work in social adjustment that I have ever seen or hope to see.

Mr. PERRY. I want to say that if the children had sat down on our floor before I had it covered with linoleum, there would be other projects in that room besides getting nails out of something.

A MEMBER. What time of dismissal is generally accepted by the council for primary children? How many hours a day should they work?

Miss CALMERTON. Madam Chairman, I should like to answer that. We have a good plan. Our children are divided into two divisions. One division works from 9 until 11 and is then dismissed, and the other division remains until 11.30. In the afternoon we have one division from 1 to 3, and those who remain until 11.30 are dismissed; and those who go home at 11 stay until 3.30; that leaves the teacher alone with that division.

CONSTITUTION AND BY-LAWS OF THE NATIONAL COUNCIL OF PRIMARY EDUCATION.

CONSTITUTION—AS AMENDED FEBRUARY 24, 1920.

I. Name. This organization shall be known as the National Council of Primary Education.

II. Purposes. Its purpose shall be to secure the cooperation of all those interested in primary schools for their betterment, through (1) greater use of the activities, (2) greater freedom of method, (3) a closer relationship with the kindergarten and the grades above.

III. Policy. Its policy shall include (*a*) informal gatherings of primary workers in connection with all the great meetings of teachers, (*b*) informal discussions of problems of immediate interest rather than papers and set programs, (*c*) influence brought to bear to have the problems of primary education receive due attention on the general and sectional programs of teachers' meetings, (*d*) to encourage local groups of teachers to study and discuss their immediate problems and to cooperate for their solution.

IV. Membership. SECTION 1. Membership shall be open to teachers, supervisors, principals, and all persons interested in the educational problems of the first four school years.

SEC. 2. Members shall be of three classes: Active, Associate, and Contributing.

Active members shall pay national dues, shall be entitled to vote on national questions, shall receive all reports and bulletins.

Associate members shall pay State and local dues only, have a vote on local questions only, shall not receive reports and bulletins.

Contributing members shall be active members who contribute more than annual dues to the support of the council.

V. Dues. Annual dues for active members, 50 cents paid into national fund.

For associate members, 10 cents paid into the State fund.

For contributing members, $1 or more paid into the national fund.

All dues shall be payable January 1 of each year.

VI. Meetings. Annual—with the Department of Superintendence of the National Education Association.

Summer—with the general meeting of the National Education Association.

Local—with any general meeting attended by groups interested in the problems of this organization.

VII. Officers. SECTION 1. The officers shall consist of a chairman, elected for a term of three years, who shall serve as executive secretary, and an advisory committee of three members, one member to be elected at each annual meeting.

SEC. 2. *Duties of officers.*—The chairman shall arrange for and preside over the regular meetings of the council and maintain a central office of communication between the various members and local branches.

SEC. 3. *Duties of the advisory committee.*—The advisory committee shall assist the chairman in dealing with matters which require prompt attention. The senior member of the advisory committee shall serve as chairman in the absence or disability of the chairman.

SEC. 4. *Election of officers.*—A nominating committee of three shall be appointed by the chairman to suggest not more than two names for each office to be filled at the annual meeting. One additional name for each office may be nominated from the floor. Election shall be by written ballot. The name receiving the highest number of votes shall be declared elected.

VIII. Legislation. Recommendation of both annual and summer meetings shall be submitted to a vote of the entire membership by mail. Matters of minor detail may be settled by a majority vote of members present at either annual or summer meetings.

IX. Standing committees. 1. Standing or research committees composed of experts actively engaged in given fields of primary education shall be appointed by the advisory committee. Each committee shall undertake research in its respective field, with a definite view to raising the standards of efficiency in primary schools, and shall report to the annual meeting at least once in two years. Such reports shall be published and distributed to the entire membership of the council. Report of progress shall be made to the advisory committee at least twice each year.

2. Standing committees shall consist of three or more members appointed for a term of two years.

3. Standing committees shall be appointed in the following fields:
   1. Organization of subject matter and method.
   2. Books, including texts, supplementary readers, teachers' helps.
   3. Furnishings and equipment.
   4. Tests and measurements.
   5. Publications and publicity.

X. Local groups. Each member shall be considered a committee of one to organize her community as suggested in item (*d*), Article III. Local groups shall arrange officers, dues, etc., in accordance with local needs. Local groups shall report to the central office resolutions and recommendations for discussion in the general meetings.

XI. This constitution, may be amended by a majority vote of the members present at any annual meeting. Such amendments shall be effective 30 days after they have been submitted to the membership for ratification by mail.

BY-LAWS GOVERNING STATE BRANCHES.

I. SECTION 1. A State branch shall be organized in harmony with the plans and purposes governing the national body.

SEC. 2. A State branch must have at least 25 active members.

II. SECTION 1. The officers of a State branch shall be a chairman, and advisory committee, and such additional officers as local conditions demand.

SEC. 2. In States having less than 25 active members the national chairman shall appoint one or more organizers to represent the council and extend its influence.

III. SECTION 1. The officers of a State branch shall be charged with the extension and organization of the National Council of Primary Education within the State.

SEC. 2. Each State branch shall be encouraged to undertake some specific study of the educational problems of the State as related to the problems under consideration by the National Council and shall report on same to the National Council.

IV. Before January 15 of each year, the State chairman shall report to the national chairman the progress of the organization within the State, including the number of local groups, with their membership, and any special accomplishments worthy of note.

V. SECTION 1. Each local group shall contribute annually to the support of the State office a sum equal to 10 cents per member.

SEC. 2. Each State office may retain for State use 10 per cent of all national dues collected through the State office and forwarded to the national office.

SEC. 3. State branches shall secure Primary Council literature through the national office at cost.

BY-LAWS GOVERNING LOCAL BRANCHES.

I. SECTION 1. Local groups may be organized in harmony with the general purposes of the National Council with such officers as local conditions demand.

SEC. 2. It shall be the purpose of each local group to foster the development of professional interest among its members through the study of the local significance of the problems studied by the National Council, and to extend the active membership of the council.

SEC. 3. The officers of a local group shall include one member whose duty it shall be to keep the public acquainted through the press and otherwise with the work of the group and with general progress in the field of primary education.

II. The officers of a local group shall be active members of the National Council.

III. When a local group is formed the local chairman shall send to the State chairman, or if there be no State organization to the national chairman, the names of the members of the group, and shall report annually, not later than December 15th, the progress of the group, including membership and any accomplishments worthy of note.

IV. In States having a State organization each local group shall contribute to the support of the State office a sum equal to 10 cents per member.

V. SECTION 1. National dues shall be paid by active members individually.

SEC. 2. Active members not affiliated with a State or local branch may pay dues directly to the national organization.

VI. Each local group shall arrange for its local expense by vote of the group.

VII. Affiliated bodies: Groups of teachers already organized under another name but for purposes identical with the purposes of the National Council of Primary Education may become affiliated with this body upon payment of $5 annually. In return the officers of the affiliated body shall have the standing of contributing members and receive all reports and bulletins of the council.

REPORT OF THE SIXTH ANNUAL MEETING, AT DES MOINES, IOWA, MARCH 3, 1921.

PROGRAM.

Rating School Programs. Mary Brady, Training Supervisor, St. Louis, Mo.

The Training of Primary Teachers in the Use of Free Activities. Marion Hanckel, Supervisor of Kindergarten and Primary Grades, Richmond, Va.

The Primary School as the Kindergartner Sees It. Mary Davis, Kindergarten Supervisor, Duluth, Minn.

Discussion.

INTRODUCTION.

By the Chairman, ELLA VICTORIA DOBBS, Assistant Professor of Manual Arts, University of Missouri.

For two years we have discussed the question, "What is an acceptable day's work?" and to-day we have come to the second stage in the discussion.

Another committee, with Miss Mary Brady, of St. Louis, as its chairman, has been going over the reports on this question. It has selected some of the observations as typical and has submitted them to a number of people, asking them to grade them in order of their preference.

RATING SCHOOL PROGRAMS.

By MARY BRADY, Training Supervisor, St. Louis, Mo.

Our report is not so full as we hoped it would be. However, this is only a beginning. We hope to go on with this investigation, and this is just a suggestion as to how it may be continued and how the data should be prepared during the coming year.

It is to be regretted that a larger number of ballots were not returned. The 23 that came in showed very conclusively, however, that the trend of thought to-day is toward a more flexible program and greater opportunity for the exercise of freedom, choice of work, initiative, and self-activity on the part of children in primary classes.

The six programs selected by the committee do not represent six different types of program. While distinctly different types would have been desirable, they were not found among those received by the Primary Council. In the programs that represent modern progressive procedure many of the strong features overlap; while between these and the formal, conservative types in which most of the work is teacher-dictated, there are very wide gaps.

Program F scores the lowest. It outlines the work in a city public school with 43 first-grade children present. The entire class was handled as one group. There was no "between-recitation" period. There was not a moment in the day when the children might initiate anything or direct themselves in any way. A 40-minute period was given to abstract arithmetic. This period was broken once by an exercise in arm movements that lasted less than 1 minute. An hour and 5 minutes was given to formal phonic exercises and a rapid drill on words and phrases printed on cards. This period was broken twice by exercises that lasted 2 minutes and were dictated by the teacher. A 30-minute period was given to reading. Each pupil was told just how many lines he was to read, without a question or comment on the thought of the lesson by either teacher or children. Dr. Hosic said yesterday that about 15 per cent of our teachers were faced in the right direction and were working with force and enthusiasm. I trust the other 85 per cent are not working along the lines indicated in program F.

The work of a public school with 34 first-grade children present has been outlined. They were handled in two groups. During the entire morning the "between-recitation" work consisted of two exercises dictated by the teacher. The first was the reproduction of three sentences from the board, for which the children used word cards. The same work was assigned to each group in turn. In the second exercise the children used plasticine and pegs. With the plasticine they made figures and placed the right number of pegs after each figure. All work was corrected by the teacher. In the afternoon each group was allowed to choose its work during one period, while the other group read. During this period some wrote figures on the board, some wrote words and names; others did free-hand cutting or cut pictures from a magazine, while a few made valentines with material they had brought from home. The teacher checked up on the work at the end of the period. Evidently members of the group were not supposed to be interested in any way in the work done by others. There was no suggestion of a free period when the teacher, too, was free to observe the children while they worked, to study their interests, and when necessary to discuss with them singly or in groups the purpose of the work being done.

The strong feature in four of the programs is the opportunity given to children for free choice of work. The value of first attempts at self-chosen activity may not be great, and there may be no definite conscious purpose in the minds of the children, but if they are allowed to show their work at the close of the period and tell about it, they gradually develop a sense of the meaning of worthwhile activities.

TRAINING THE PRIMARY TEACHER TO USE FREE ACTIVITIES.

By MARION S. HANCKEL, Supervisor of Kindergarten and Primary Grades, Richmond, Va.

Much is said and written about making the primary teacher free, by giving her the same equipment, furniture, and materials as are provided for kindergartners. Teachers are being gradually trained to use such equipment, but we must not forget that the greater number of primary teachers in our public schools are not so trained. They do not want, and know they can not use, this equipment educationally; so it is useless to force it on them until they are ready for it.

" Free materials and activities " hamper the old-fashioned teacher, be she young or old. They promote, she thinks, disorder and noise, which she dislikes. She wants an immovable child, immovable furniture, and a book, a pencil, and a piece of paper to work with, because she is an immovable teacher—so immovable that she must suffer a complete change before she herself will be free. When she is free, her thoughts will not be " tied to the years that are gone." but she will be " alert, imaginative, and in sympathy with the needs and opportunities of to-day."

I have no new remedy for this very old difficulty, but I have faith, " a conviction of an unseen ideal leading to the obedience of a life," which gives me hope. Just as I can remember changes in schoolroom furniture from long wooden benches, reaching to the ceiling, where 100 children were taught by one teacher and sat for hours without moving, up to the single, adjustable desk and seat, such as we use in most of our best schools now, so the day of movable furniture, free activities, and movable teachers is coming, and we are hastening that day through our work for this ideal.

Superintendents and supervisors must change, as well as the teacher, and not require so much formal work in the course of study. The course of study must fit children, and not the reverse, which is too often the case to-day. The kindergarten should dictate to the first grade, the first to the second, the elementary school to the high school, and so on up to the university. When this is done, there will be better teaching, freer, happier teachers, and the children will learn more than they do now. The World War tried to teach us this lesson, but some of us are slow in learning.

To free the teachers even more, let us take the children into our confidence and find with them needs that they have for the formal facts which they must learn and have the power to acquire.

Coordinate the subject matter of the course of study so as to keep the so-called subjects related, as they are in life.

Reduce the number of children in a class, particularly if they are immature mentally. This reform is much needed, because our compulsory-education laws have increased the number of low-grade minds in our schools, and they are often crowded in part-time classes.

If after two terms in the same grade the children seem incapable of doing the work necessary, place them in "observation classes." This is being done successfully in Cincinnati and Richmond, Va.

Use school time for teachers' meetings and home visiting; and, as a city's industries, libraries, and museums have such important relations to every child's education, encourage excursions to give the children first-hand experiences. Any school system which does not include these in its course of study is adding to the handicaps of its future citizens.

When the above and a few other local handicaps are removed, we can begin to look for signs on the part of the immovable teacher that she has changed her attitude. She will want to study the children who have come from the grade below, and will have time, in thought and feeling, to stop and learn what they have gained which she can use in her grade.

The supervisor will then have a chance to help the teacher, through suggestion and praise, to do individual, original work, to see that she needs further training to keep up with the times, or to compete with teachers from good normal schools, so that some will ask to be trained while they are in service. The results of this training can be at once carried into their schoolrooms, and these few can do much to leaven the lump of teachers, some of whom feel too old to change. Others are young in years, but their training did not make them broad-minded or adaptable to new conditions.

Many supervisors will say, "But the remedies you suggest are mainly in the province of administration," and so they are; but there never was a time in the world's history when teachers influenced administration as they do to-day. Our part is to so guide this public opinion which is moving teachers everywhere that they will ask for and get those things which will carry our schools forward to that democratic ideal which the nations of the world are looking to us to give them now.

To bring this ideal will take time; so let us not hurry and be impatient of delays if the trend is forward, but rather let us be "tactful, gentle, patient, strong, and unswerving" for the faith that is in us.

WHAT THE PRIMARY SCHOOL NEEDS FROM THE KINDERGARTEN POINT OF VIEW.

By MARY DABNEY DAVIS, Supervisor of Kindergarten and Primary Grades, Duluth, Minn.

The work in our schools at the time that this topic was given to me had made me feel very optimistic concerning the present good work done in our primary grades.

There is an organized system of visiting days, when the teachers visit in their own buildings as well as in other buildings in the city where various types of work are being conducted. Play periods are organized in most buildings in which the lower primary groups use the kindergarten room for self-initiated activities, while the kindergarten children have language and story work in the primary room. There is an exchange between kindergarten and lower primary rooms of equipment, such as slides, walking boards, seesaws, as well as the large Hill blocks.

The buildings and grounds committee of the board of education had invited four of us, representing the teachers, principals, and supervisors, to act in an advisory capacity on the plans for new buildings. As a result of these conferences plans had just come from the architect, which included bay windows, a playroom common to kindergarten and first grade, and floor aquaria.

I felt that my optimism, created by these activities, might need tempering; so I placed the question, " What does the primary need from the kindergarten point of view? " to a kindergartner, a primary teacher, a principal, a supervisor, and a superintendent. These were the answers:

The kindergartner said, "Allow the primary more self-initiated activities." This is a problem of time, a question of " when."

The primary teacher said, " Provide a separate room for free activities. My boys work on big construction problems and say it is no fun to do things if they can't talk." This is a problem of space, or " where."

The principal said, " The primary school needs a teacher who knows how to conduct self-initiated activities." This is an administrative problem dealing with teachers already in service as well as a training-school problem, a question of " how."

The supervisor said, " The kindergarten idea seems to me to center around child-conducted activities. Some kindergartners do not demonstrate it and some primary teachers do. My idea then is to incorporate this as a principle and let all try to demonstrate it. This means to understand what play is, and how to provide for small group work."

Analyze now some of the reasons why the kindergarten has been able to make its splendid contribution to the education of little children, why it has been able to demonstrate the "when," "where," "how," and "what" in the education of little children. Then see what possibilities it has yet to disclose and what contributions the primary teachers are now making in the line of current educational practice.

The kindergartner has always had special training, with special emphasis upon child study and the materials helpful in the training of little children. She has always, through her work with young children and her freedom from school routine, had an apportunity to come in close connection with the home. Because of her special training, administrators have generally left her free to conduct her work with a choice of time schedule and materials that has never fallen to the lot of a primary teacher. On this account she could lay more emphasis on health and character formation through habit development. This can answer the question of "when," "how," and "what." Because of the movable furniture and the equipment adapted to little children, room arrangements have been possible to provide for work which called for both concentration and manual activities. A recognition of this provision for different types of activities is altering the furniture and room arrangement of our primary schools. The kindergartner has been the first in the field of measurements of achievements to record the child's growth in things other than subject matter. Through record cards of daily and monthly work a change of idea in lower primary report cards is becoming prevalent.

When the kindergarten's contribution is recognized to the extent that it is placed as the beginning of the school situation, it must recognize an even added responsibility. The school subjects of the curriculum are necessary skills, just as habits and attitudes are a part of the training for citizenship. To be an integral part of the school system the kindergarten curriculum must demonstrate that it contains in solution the arithmetic, language, reading, history, and geography that are crystallized as subjects in the upper grades. Such a consciousness of purpose will add greater dignity and power to the kindergarten work. The kindergarten program provides for the strongest demonstration of correlation. This is the reason why it would be difficult for a visitor to lay his finger on any one activity and label it one of the accepted elementary school subjects.

An illustration of the correlation of the course of study.

English.	Reading.	History and geography.	Industrial art.	Drawing.
Experiences of vacation, home, school, outdoors.	Pre-primer work in action sentences based on experiences.	Food supply; its relation to fall garden, grocery store, farm, etc.	Represent farm life on sand table; make a store (counters), model vegetables, fruit; construct things used in store.	Illustrate farm life with crayons (using crude symbols); drill on drawing of house, truck, animals, wagon, etc.

An illustration of the correlation of the course of study—Continued.

Picture study.	Music.	Physical education.
The Sheepfold—*Jacque*. Calling in the Herd—*Millet*. The First Step—*Millet*. Madonna of the Chair—*Raphael*.	Use the home songs, doll songs, Mother Goose melodies, songs of birds, flowers, or any subject which enters daily experiences and surroundings of child.	Dramatize Story Plays, page 77, Course of Study. Home, industrial, and season activities.

Primary schools are now accepting the idea of units of work or projects as a guide for their daily programs. Various demonstrations of correlation are being made. Last year a course of study was introduced in our city of Duluth. The subjects of the curriculum—English, drawing and industrial art, physical education and music, geography and history, and arithmetic—were outlined for every grade from the kindergarten through the high school. To our new teachers the problem of reading five volumes of a course of study and assimilating its meaning while teaching was great. For their help particularly, we made cross sections of the course of study. For example, the correlation of the course of study in the B 1 work was written in columns headed English, History and Geography, Drawing, Industrial Art, Picture Study, Music, Nature Study, and Physical Education. Into these columns fell the high lights of the course of study. Reading down in each of these columns we could see the progress of the particular subject. Reading from left to right, one phrase or sentence at a time, the possibility of correlation of the subjects was vivid. As the teacher read under geography, "Food supplies and their relation to the grocery store and farm," she could find something in each of the other columns which would carry on the same thought in another subject. For example, under drawing, "Illustrate farm life with drawing, using crude symbols"; under picture study, "The Sheepfold"; under English, "Experiences of home, school, and outdoors," activity sentences based on these experiences for beginning reading. Under music and nature study were similar suggestions. Culling in this way from the cross section of the course of study makes a suggestive weekly program. The form of this program is at present imitating that of the correlation of the course of study. Across the top of a double page in a blank book the teacher places her time schedule with the subjects of the curriculum. She divides the rest of the page into five checks and inserts the experience from the course of study probably desirable at that time, a note of possible correlation between this particular work and the other subjects, and leaves a space for inserting such things as happen for which no plan had been made.

Besides the cross section of the course of study, showing the correlation of the subjects and the weekly lesson plans, the teachers are beginning to see the value of taking a subject such as "Indian life" and analyzing what possible experiences in the course of study can be taugh while the children are developing this topic as a unit of interest.

It is necessary to prove that skill and ability are achieved through following units of child interest. Thinking of this brought out the question of what really determines promotion in the kindergarten and lower grades. This is a common question, and many have tried various ways of solving it. In the State of Minnesota there is no law requiring children of 5 to attend a kindergarten, nor any legal ruling whereby a 6-year-old child of lower mentality can be retained in a kindergarten. Ways and means of educating the public and of educating ourselves as to the worthwhileness of the work which we are doing in the kindergarten have stimulated experiments with report cards which can be termed practical.

Last year the kindergartners experimented with a daily record sheet and a quarterly report card. After all the criticism had been considered a final sheet was printed and is being used this year. The child is rated for his English, his physical freedom, social life, habits, and industrial art abilities. The very appearance of this systematic printed daily record sheet and the summary card has been of more help to establish in parents' minds that the kindergarten is a place of definite businesslike procedure than anything heretofore.

One of the supervisors' duties is to bring this idea before the public through the parent-teachers' clubs. The very intelligibility of these report cards to the parents has made it evident that something along this line would be desirable for lower grades. There has been in use in Duluth a report card from the first grade through the eighth on which each subject of the curriculum is marked numerically. The following are specific instances of the dissatisfaction which this method creates: In a second grade a child held her card to the teacher and said, "What does 73 in language mean?" When 73 as a grade and language as a subject had been explained to her she straightened and said, "Well, if I'd known that I could have talked more than 73." In a first grade a child had been slow in all the school subjects and had made very little if any progress. To encourage her one day the teacher emphasized her helpfulness with the other children when they were putting on their wraps. After the other children had left the room this child slipped up to the teacher and said, "Please put how well I helped with the coats on my report card." To incorporate such legitimate skill into a report card is our present problem.

As a guide in that direction, we sent out two questionnaires, one to the kindergartners and one to the B 1 teachers, asking for a distribution of 100 points among certain qualities of skill and behavior by which a child's promotion could be determined. A summary of the kindergarten report showed that 43.59 per cent of the counts were given to English, which included dramatization and ability to use complete sentences, a knowledge of 6 Mother Goose rhymes, 30 lines of other verse, ability to tell a story, describe a picture, or tell of an experience with a minimum use of three sentences, and the elimination of three grammatical errors tabulated by the teacher at beginning of year.

Habits received nearly 26 per cent of the counts. The habits listed as being desirable were the power to set a problem, plan and execute it, and judge the result; courtesy, using thank you, excuse me, please John; helpful initiative and self-reliance in the group; honesty and trustworthiness; health and posture; obedience; orderliness; carefulness in handling material.

Industrial arts received 17.8 per cent of the counts. This included the following: Know six standard colors; ability to draw a house correctly, showing one end and one side at once; ability to paint within an outline; ability to cut on a line; ability to weave simply; ability to construct from a 16-fold basis; and familiarity with pictures outlined for kindergarten.

Music received 12.63 per cent of the counts. This called for the ability to sing three simple songs with tone and word accuracy; an ability to interpret 2/4, 3/4, 4/4 rhythm, skip with two feet, and catch a ball twice in succession.

Our deductions were made along these lines. Since nearly half the time in the kindergarten is devoted to developing English, are we getting in the first and upper grades proper reaction from it? If we are devoting that amount of time, are we using it to its full value?

The B-First returns were collected under two headings—one, the child's ability to read; the other, habits listed similarly to that on the kindergarten questionnaire. Reading and habit formation determine a child's promotion, while other subjects do not. A large per cent of the first-grade teachers considered reading the one essential for promotion. The others gave 69 per cent for reading and 30 per cent for habits. The interesting fact is that practically the same emphasis is given habit formation in the first grade as is given in the kindergarten. In the kindergarten and probably in the B-First this rating becomes a question of the presence or absence of the habits desirable. In the upper grades a rating of the degree to which those habits are used might be taken into consideration in the forming of a new report card.

The results of this discussion among the teachers centered around a decision to permit such teachers as desired, and who felt themselves capable, to experiment in teaching the first and second grades to determine new standards of attainment. Accurate records will be kept and comparative results will be drawn. It also resulted in committees representing the kindergartens and first two grades, and the third and fourth grades meeting to formulate a report card intelligible to parents and a measure of a child's achievement in subjects and behavior. One other suggestion was made, and that is the possibility of trying the idea of a cycle of teachers from the kindergarten through the first grade. This would mean that a kindergarten teacher would pass through at least the first-grade experience of her group of children before returning to her work. We have a few teachers who will carry on this experiment, and the result will be an inspiration for the other teachers.

Some of the difficulties about introducing new ideas in a public-school system are the many people to consider—the superintendent; the business superintendent; the supervisor of upper grades, who will receive into his department the children now being educated or led astray; the principal, who has the orderliness of her building at heart; the teacher, who is proverbially regarded as rigid in her teaching; the janitor, who doesn't like to sweep too many times nor among irregular furniture; and the parent, who wants the three R's taught without any frills.

The kindergarten work centers around the children. The temptation in the primary school is to center its work around subject matter. But both kindergartner and primary teacher must know the interests and probable abilities of little children. They must become familiar with the subject matter and materials that will meet and further such interests and abilities. They must have an opportunity to discuss their difficulties where they will receive help. The administrators of the school system must have faith in the principle of self-activity as an educational factor. They must also have the same faith and confidence in the primary teacher as they have in the kindergartner. A situation of this sort is educational for child, teacher, administrator, and community alike. The product will prove that the principle is correct.

DISCUSSION.

Mr. Down, of Highland Park, Mich. We feel considerably indebted to this organization, and I do not mean to let pass this opportunity of telling something of the work we are undertaking in one of our schools to bring a closer relationship between the kindergarten and the first grades.

I was at the meeting of this organization in Chicago a few years ago when the matter of equipment was discussed.

We had to have an addition to one of the buildings. We planned a little different feature than is ordinary in the primary grade of the school, in order to bring a closer relation between the kindergarten and the first grade, and we are working at it along this line.

The space occupied by two ordinary classrooms we divided into three parts, making two small rooms half the size of the regular classroom and a larger room between. We then divided our group of children into four parts, a group occupying each small room with two groups in the larger room. Thus the number of children in the middle room is twice the number in a small room. In this large room they carry on free activities. We have a single table, two small benches with small tools, hammer and hack saw, drills and brace and bits. We have equipment such as erector sets, dolls and sewing material, stamping outfits, and in one of the rooms we fitted up a good-sized house which the children could get inside of and use for study places. Also, we have a small sand box that the children of the first grade have an opportunity to use also. The rooms at the end are just for customary formal work. These rooms are furnished with movable desks and chairs, and the big room has chairs and a table. The groups work in the small rooms for an hour and a half and in the large room until noon.

Mr. Rader, of St. Louis. I merely want to raise a question. I live in St. Louis, where we have a large number of teachers who have had kindergarten work now teaching in the first and the second grade. I would like to ask the gentleman how the equipment such as he has, and which I believe compares with the equipment in the kindergarten, could be supplied to our first grades in St. Louis. The plan that he has described would bankrupt the city, in the opinion of the board of education.

Mr. Down. The equipment, of course, costs money. There is no question about that, and probably this equipment costs as much or more than that used in the kindergarten.

I managed to get this equipment provided for in the bond issue, and we got it through. The equipment doesn't wear out; it will last for years. There isn't anything we can put our money into that is better.

The Chairman. I think that I heard some one say yesterday that only persons of the better class could have education. Surely, we have a right to demand something more than that. Adequate education for all children is the most important problem we have to-day, and I believe that, if the Primary Council, or the Kindergarten Union, or the National Education Association, or any other organization of teachers has one big job to do, it is this job of impressing the public with the needs of the school. Our American people do appreciate the importance of education, only they have gotten into a rut with regard to the cost of the best sort of education. We can always find money for the things we really want or find desperately necessary. The war surprised us greatly as to our ability to raise money. The record of our expenditures as a nation for luxuries during the past year proves we are still far from bankrupt. The people will provide the money when they appreciate the real needs of the case, and we as teachers must take the public into our confidence and realize that it is as much our business to develop public opinion as it is to teach the children who come before us in our classes.

When we do that—when we go before them, not as agitators, but systematically in the interest of public welfare, with the same carefully prepared plans that we use in our classes—I am sure there will be other places to give such accounts as that to which we have just listened and that soon a day will come when no teacher will have to say, "I am trying to teach 62 children in the first grade." It is a crime; 62 children can not be *taught* in one first-grade class. They would be herded; nothing more.

Mr. Starkweather. May I make this suggestion: In order to get the public to provide funds, you will have to agree on what you want; in the second place, you will have to know why you want it; and in the third place, you will have to tell why it is necessary. When they have that, the public are perfectly satisfied. They want the education, they like to be educated, they enjoy it, and they have a good time at it, but somebody who knows, who knows why he knows, and who knows how to tell it, must put it up to them.

A MEMBER. I would like to ask Mr. Down the maximum number in the middle room and the number in the two end rooms.

Mr. DOWN. We are running about 75 pupils and 3 teachers in all. Of the 75 pupils, half would be in the large room or workshop at one time, and about one-fourth in each small room. Of course, they are not always divided exactly even. All the children have been given tests, and they are separated according to their abilities, which gives us groups able to do the same work, and which allow considerable variety in the work.

A MEMBER. I would like to reply to Mr. Starkweather. He is asking how to tell the public what we have to say and why we believe in it, and, third, how to sell the public what we have to sell.

Last May, 16 people of New Jersey went to Trenton in response to an invitation by Miss Mary L. Neer, of Camden, and we formed a council. That has grown until we have about 40; we hope for 400 soon. We have on our membership two superintendents, supervisors in normal schools, teachers, and grade teachers. I think we ought to have more women. The New Jersey branch is trying to make a program for this coming spring. During the next two months we hope to hold four meetings—one in north Jersey, one in east and one in west Jersey, and at that time we wish to present what we know of the greater use of activity for the children, greater freedom of method on the part of the teacher, and the closer union of the kindergarten and the primary grades. These are our aims.

I think that there are many places in which we can educate our teachers and educate the people and show them what we are striving for. That is our hope. Referring to Mr. Down's plan, the school is the home for the little child, and the school-teacher is the home mother. For that reason I would rather feel it is better to have 25 children each for three teachers than 75 children with three teachers, one teacher perhaps directing the games and the other teachers planning other work. I feel most strongly the need for the smaller number in closer relation to the teacher. I don't know that any teacher, however immovable, would have to be immovable if she had 25 pupils. I think the average teacher has such love for the work that she would work out of being immovable if she had only 25 children. It is the impossible work she is compelled to do, with the seats fastened to the floor and the classes crowded to the edge of the room, that keeps her from growing. We have other teachers who have been in darkness who would love to do more progressive work, but they are rather timid about going away for study. I think they should be encouraged to take advanced work. I think a teacher should be encouraged to do what she understands but not forced to use new methods blindly, because a project, if enforced, can be the most formal thing—almost as formal as the old. One great danger at the present time is the tendency to force this project method too soon upon teachers who have not had the experience, and for that reason they are not working through the child's initiative, and it becomes formal. If this is done it is going to spoil all our work, and people will not appreciate its value.

I would make a plea for smaller numbers for the primary school, not more than 35. That should be the maximum number. We have schools where we have not more than that. Our day is coming, but in order to make every junior high school a success they have crowded the primary grades. This is a great mistake, because no structure can be stronger than the foundation, which in school is the kindergarten, of course.

Miss HALL. That is just exactly what I have in my mind.

See what is happening. It is an ever-present thing, the desire to make the junior high school successful; all the kindergarten and younger children are crowded in the rooms that are left.

I am not willing to leave this afternoon with the thought that 85 per cent are below par and 15 per cent above par. I think the 15 per cent should stand out as unusual because they have greater initiative and skill in teaching. That is my experience. Our teachers will develop when they have an opportunity to find themselves, in this new work. I have in mind two schoolrooms. In one is a teacher who has been in service many, many years, and I really must say 10 years ago I thought she couldn't change. I really supposed she was beyond changing; I was in her room a week ago and I have never seen a better example of good work. She said to me, "Why didn't I know this long ago? I didn't know children until this year, until now." There is a different relationship. I believe this new work is going to help, it is our business to make it help, our grade work.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1920, No. 48

STATISTICS OF STATE UNIVERSITIES AND STATE COLLEGES

FOR THE YEAR ENDED
JUNE 30, 1920

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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STATISTICS OF STATE UNIVERSITIES AND STATE COLLEGES.

For the Year Ending June 30, 1920.

This annual bulletin, formerly prepared and published by the National Association of State Universities, has been published by the Bureau of Education for the past 12 years. The data given are taken from reports received from the offices of the presidents of the various institutions, and the figures printed are substantially as given in those reports.

Directory of State universities and State colleges.[1]

[Names in *italics* are institutions endowed by the Federal Government under the Morrill Acts.]

Location.	Name.	President.
Auburn, Ala	*Alabama Polytechnic Institute*	Spright Dowell, LL. D.
Montevallo, Ala	Alabama Technical Institute and College for Women.[2]	T. W. Palmer.
University, Ala	University of Alabama	George H. Denny, LL. D.
Tucson, Ariz	*University of Arizona*	R. B. von Klein Smid, A. M.
Fayetteville, Ark	*University of Arkansas*	John C. Futrall, A. M.
Berkeley, Calif	*University of California*	David P. Barrows, LL. D.
Boulder, Colo	University of Colorado	George Norlin, Ph. D.
Fort Collins, Colo	*Colorado Agricultural College*	Chas. A. Lory, LL. D.
Golden, Colo	Colorado School of Mines	Victor C. Alderson, Sc. D.
Storrs, Conn	*Connecticut Agricultural College*	Charles L. Beach, B. S.
Newark, Del	*Delaware University*	Walter Hullihen, Ph. D.
Gainesville, Fla	*University of Florida*	Albert A. Murphree, LL. D.
Tallahassee, Fla	Florida State College for Women	Edward Conradi, Ph. D.
Athens, Ga	*University of Georgia*	David C. Barrow, LL. D., chancellor.
Atlanta, Ga	Georgia School of Technology	Kenneth G. Matheson, LL. D.
Dahlonega, Ga	North Georgia Agricultural College	Gustavus R. Glenn, LL. D.
Honolulu, Hawaii	*University of Hawaii*	Arthur L. Dean, Ph. D.
Moscow, Idaho	*University of Idaho*	Alfred H. Upham, Ph. D.
Pocatello, Idaho	Idaho Technical Institute[2]	Charles R. Frazier, B. L.
Urbana, Ill	*University of Illinois*	David Kinley, LL. D.
Bloomington, Ind	Indiana University	William L. Bryan, LL. D.
La Fayette, Ind	*Purdue University*	Henry W. Marshall, acting.
Ames, Iowa	*Iowa State College of Agriculture and Mechanic Arts.*	Raymond A. Pearson, LL. D.
Iowa City, Iowa	State University of Iowa	Walter A. Jessup, Ph. D.
Lawrence, Kans	University of Kansas	E. H. Lindley, Ph. D.
Manhattan, Kans	*Kansas State Agricultural College*	William M. Jardine, LL. D.
Lexington, Ky	*University of Kentucky*	Frank L. McVey, Ph. D.
Baton Rouge, La	*Louisiana State University and Agricultural and Mechanical College.*	Thomas D. Boyd, LL. D.
Orono, Me	*University of Maine*	
College Park, Md	*University of Maryland*	Alfred F. Woods, D. Agri.
Amherst, Mass	*Massachusetts Agricultural College*	Kenyon L. Butterfield, LL. D.
Cambridge, Mass	*Massachusetts Institute of Technology*	Ernest F. Nichols, LL. D.
Lowell, Mass	Lowell Textile School	Charles H. Eames, B. S.
Ann Arbor, Mich	University of Michigan	Marion Le Roy Burton, LL. D.
East Lansing, Mich	*Michigan Agricultural College*	David Friday, A. B.
Houghton, Mich	Michigan College of Mines	Fred W. McNair, Sc. D.
Minneapolis, Minn	*University of Minnesota*	Lotus D. Coffman, Ph. D.
Agricultural College, Miss	*Mississippi Agricultural and Mechanical College.*	D. C. Hull, M. S.
Columbus, Miss	Mississippi State College for Women	J. C. Fant, Ph. D.
University, Miss	University of Mississippi	Joseph N. Powers, chancellor.
Columbia, Mo	*University of Missouri*	
Bozeman, Mont	*Montana College of Agriculture and Mechanic Arts.*	Alfred Atkinson, D. Sc.
Butte, Mont	Montana State School of Mines	George W. Craven, B. S.

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[1] Corrected to Aug. 16, 1921, in so far as changes have been reported to this bureau.
[2] Junior college.

Directory of State universities and State colleges—Continued.

Location.	Name.	President.
Missoula, Mont	University of Montana	Charles H. Clapp, Ph. D.
Lincoln, Nebr	*University of Nebraska*	Samuel Avery, LL. D., chancellor.
Reno, Nev	*University of Nevada*	Walter E. Clark, Ph. D.
Durham, N. H	*New Hampshire College of Agriculture and Mechanic Arts.*	Ralph D. Hetzel, LL. D.
New Brunswick, N. J	*Rutgers College*	Wm. H. S. Demarest, LL. D.
Albuquerque, N. Mex	University of New Mexico	David S. Hill, LL. D.
Socorro, N. Mex	New Mexico School of Mines	E. H. Wells, B. S.
State College, N. Mex	*New Mexico College of Agriculture and Mechanic Arts.*	R. W. Clothier, Ph. D.
Albany, N. Y	New York State Library School	James I. Wyer, jr., director.
Ithaca, N. Y	*Cornell University*	Livingston Farrand, LL. D.
Syracuse, N. Y	New York State College of Forestry (at Syracuse University).	Franklin Moon, M. F.
Chapel Hill, N. C	University of North Carolina	Harry W. Chase, Ph. D.
West Raleigh, N. C	*North Carolina College of Agriculture and Engineering.*	Wallace C. Riddick, C. E.
Agricultural College, N. Dak	*North Dakota Agricultural College*	Edward F. Keene, M. E., acting.
University, N. Dak	University of North Dakota	Thomas F. Kane, LL. D.
Athens, Ohio	Ohio University	Elmer B. Bryan, LL. D.
Columbus, Ohio	*Ohio State University*	Wm. O. Thompson, LL. D.
Oxford, Ohio	Miami University	Raymond M. Hughes, M. S.
Chickasha, Okla	Oklahoma College for Women	G. W. Austin, B. S.
Norman, Okla	University of Oklahoma	Stratton D. Brooks, Ph. D.
Stillwater, Okla	*Oklahoma Agricultural and Mechanical College.*	James B. Eskridge, Ph. D.
Corvallis, Oreg	*Oregon State Agricultural College*	Wm. J. Kerr, Sc. D.
Eugene, Oreg	University of Oregon	Prince L. Campbell, A. B.
State College, Pa	*Pennsylvania State College*	John M. Thomas, LL. D.
San Juan, P. R	*University of Porto Rico*	Paul G. Miller.
Kingston, R. I	*Rhode Island State College*	Howard Edwards, LL. D.
Charleston, S. C	Medical College of the State of South Carolina.	Robert Wilson, jr., M. D., dean.
Do	The Citadel, the Military College of South Carolina.	O. J. Bond, A. M., supt.
Clemson College, S. C	*Clemson Agricultural College*	Walter M. Riggs, E. M. E.
Columbia, S. C	University of South Carolina	Wm. S. Currell, Ph. D.
Brookings, S. Dak	*South Dakota State College of Agriculture and Mechanic Arts.*	Willis E. Johnson, Ph. D.
Rapid City, S. Dak	South Dakota State School of Mines	Cleophas C. O'Harra, Ph. D.
Vermilion, S. Dak	University of South Dakota	Robert L. Slagle, Ph. D.
Knoxville, Tenn	*University of Tennessee*	Harcourt A. Morgan, LL. D.
Austin, Tex	University of Texas	Robert E. Vinson, LL. D.
College Station, Tex	*Agricultural and Mechanical College of Texas.*	Wm. B. Bizzell, D. C. L.
Denton, Tex	College of Industrial Arts	F. M. Bralley, LL. D.
Logan, Utah	*Agricultural College of Utah*	Elmer G. Peterson, Ph. D.
Salt Lake City, Utah	University of Utah	George Thomas, Ph. D.
Burlington, Vt	*University of Vermont and State Agricultural College.*	Guy W. Bailey, A. B.
Blacksburg, Va	*Virginia Polytechnic Institute*	Julian A. Burruss, A. M.
Charlottesville, Va	University of Virginia	Edwin A. Alderman, LL. D.
Lexington, Va	Virginia Military Institute	Edward W. Nichols, supt.
Richmond, Va	Medical College of Virginia	Stuart McGuire, M. D.
Williamsburg, Va	College of William and Mary	J. A. C. Chandler, Ph. D.
Pullman, Wash	*State College of Washington*	Ernest O. Holland, Ph. D.
Seattle, Wash	University of Washington	Henry Suzzallo, Ph. D.
Morgantown, W. Va	*West Virginia University*	Frank B. Trotter, LL. D.
Madison, Wis	*University of Wisconsin*	Edward A. Birge, LL. D.
Laramie, Wyo	*University of Wyoming*	Aven Nelson, Ph. D.

TABLE 1.—*The teaching force in State universities and State colleges for the year 1919–20.*

Names of institutions.	Professors and instructors.			President's salary.	Maximum and minimum salaries.																House in addition to salary for—	
					Deans.		Professors.		Associate professors.		Assistant professors.		Adjunct professors.		Instructors.		Assistants.		Tutors and others.			
	Men.	Women.	Total.		Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	President.	Professors.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Alabama Polytechnic Institute	95	2	97	$6,000	$3,600	$3,600	$3,000	$2,400	$2,000	$1,500	......	......	......	......	$1,500	$1,000	$750	$250	......	......	Yes.	0
Alabama Technical Institute and College for Women.	4	32	36	4,000	1,800	......	2,400	1,200	1,500	1,000	$1,100	$900	......	......	900	......	......	......	......	......	Yes.	0
University of Alabamas	68	4	72	7,500	3,900	3,000	2,800	2,000	2,000	1,800	1,800	1,400	......	......	1,600	630	......	......	......	......	Yes.	0
University of Arizona	56	12	68	9,000	5,000	4,500	3,800	2,500	2,900	2,400	2,700	2,100	......	......	2,100	1,500	1,000	750	......	......	Yes.	0
University of Arkansas	85	18	103	7,000	6,000	4,250	4,000	3,000	3,000	2,500	2,500	2,000	......	......	2,000	1,600	......	......	......	......	No..	0
University of California	739	189	928	12,000	3,000	500	8,000	3,000	3,200	2,400	2,700	1,500	......	......	2,400	1,200	2,000	200	$4,000	$500	Yes.	2
University of Colorado	205	29	234	7,500	4,000	3,200	3,500	2,800	2,800	2,300	2,300	1,800	......	......	1,800	1,200	1,200	......	......	......	Yes.	0
Colorado Agricultural College	56	21	77	6,000	3,000	......	4,100	2,600	3,033	2,300	2,400	1,800	......	......	1,700	1,700	......	......	......	......	Yes.	0
Colorado School of Mines	26	0	26	6,000	3,600	2,000	......	......	2,200	1,800	......	......	......	......	......	......	......	......	......	......	Yes.	0
Connecticut Agricultural College	43	13	56	6,000	4,000	2,750	3,700	3,000	3,000	2,000	3,000	1,900	......	......	2,500	1,000	......	......	......	......	No..	0
Delaware College	42	12	54	6,000	4,000	3,300	3,600	2,700	3,000	2,700	2,500	1,800	......	......	2,100	1,800	500	500	......	......	No..	5
University of Florida	55	2	57	4,600	2,700	2,500	2,400	2,100	......	......	2,100	1,800	......	......	1,800	1,700	250	125	......	......	No..	0
Florida State College for Women	12	31	43	5,000	2,700	2,400	2,500	2,200	......	......	1,700	1,600	......	......	1,600	1,200	......	......	......	......	No..	0
University of Georgia	80	6	86	6,000	1,000	200	3,600	2,600	2,100	1,800	......	......	$1,700	$1,500	1,200	1,200	300	200	1,000	600	Yes	0
Georgia School of Technology	91	0	91	7,500	3,500	3,100	3,000	2,500	2,350	2,100	......	......	......	......	2,000	1,200	......	......	1,000	750	Yes.	1
North Georgia Agricultural College	14	2	16	2,500	2,200	......	2,000	......	1,500	......	......	......	......	......	900	......	......	......	......	......	No..	0
University of Hawaii	21	7	28	6,000	......	......	3,600	2,400	......	......	3,000	2,100	......	......	1,800	1,500	......	......	......	......	No..	0
University of Idaho	83	14	97	6,000	4,500	3,000	3,500	2,200	2,400	2,000	2,200	1,700	......	......	2,100	1,500	1,500	1,000	......	......	No..	0
Idaho Technical Institute	23	9	32	5,000	3,040	2,625	2,500	2,250	2,000	1,750	......	......	......	......	1,700	1,400	......	......	......	......	No..	0
University of Illinois	822	126	948	12,000	6,000	2,000	5,500	3,000	3,200	2,650	3,500	2,000	3,000	1,500	2,250	1,000	2,000	800	......	......	Yes.	0
Indiana University	169	28	197	7,500	5,500	2,800	4,400	2,750	3,800	2,100	3,500	1,500	......	......	2,200	900	......	......	......	......	No..	0
Purdue University (Ind.)	193	19	212	7,500	4,500	2,400	3,600	1,600	2,750	2,000	2,400	1,700	......	......	2,000	1,200	1,300	600	......	......	No..	2
Iowa State College of Agriculture and Mechanic Arts.	224	105	329	10,000	5,000	3,750	4,500	2,700	3,750	2,000	2,700	1,400	......	......	2,000	1,200	1,200	720	......	......	Yes.	3
State University of Iowa	206	57	263	10,000	5,000	2,000	5,500	2,500	3,500	2,250	3,000	1,600	......	......	2,750	1,000	700	75	......	......	Yes.	0
University of Kansas	247	64	311	6,500	4,500	......	3,500	2,900	2,800	2,400	2,300	1,800	......	......	1,700	1,200	1,200	......	......	......	Yes.	0
Kansas State Agricultural College	151	69	220	6,500	4,800	3,000	4,000	1,900	3,200	1,600	2,500	1,700	......	......	2,500	900	1,800	900	450	450	No..	0
University of Kentucky	87	22	109	8,500	6,000	3,500	3,300	1,700	2,300	2,100	2,400	1,500	......	......	1,600	800	2,600	800	2,800	480	Yes,	0
Louisiana State University and Agricultural and Mechanical College.	66	21	87	6,000	4,500	1,500	3,120	2,000	2,280	1,920	2,140	1,680	......	......	1,500	900	......	......	1,500	440	Yes.	1

TABLE 1.—*The teaching force in State universities and State colleges for the year 1919–20*—Continued.

Names of institutions.	Professors and instructors.			President's salary.	Maximum and minimum salaries.																House in addition to salary for—	
					Deans.		Professors.		Associate professors.		Assistant professors.		Adjunct professors.		Instructors.		Assistants.		Tutors and others.			
	Men.	Women.	Total.		Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	President.	Professors.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
University of Maine	93	13	106	$6,000	$3,450	$3,450	$2,700	$2,200	$2,250	$1,750	$1,800	$1,500	......	......	$1,300	$1,000	$500	$500	......	......	Yes.	0
University of Maryland	47	6	53	10,000	4,000	2,500	3,000	1,800	......	......	2,000	1,400	......	......	1,500	600	......	......	$1,200	$500	No.	0
Massachusetts Agricultural College	79	2	81	7,500	5,000	3,600	3,750	2,500	2,500	2,000	2,500	1,900	......	......	1,800	1,200	......	......	......	......	Yes.	0
Massachusetts Institute of Technology.	267	2	269	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Lowell Textile School (Mass.)	30	0	30	4,500	......	......	4,000	2,800	......	......	3,000	2,160	......	......	1,920	1,500	500	60	......	......	No.	0
University of Michigan	449	5	454	12,000	10,000	4,500	10,000	4,000	3,750	3,500	3,000	2,500	......	......	2,500	1,500	1,200	250	......	......	No.	0
Michigan Agricultural College	145	26	171	7,000	4,200	3,300	3,750	1,800	2,800	2,000	2,400	1,500	......	......	2,200	1,200	......	......	......	......	No.	6
Michigan College of Mines	22	0	22	5,000	......	......	3,700	......	3,000	......	2,700	2,400	......	......	2,600	1,700	1,800	......	......	......	Yes.	0
University of Minnesota	712	102	814	12,000	8,000	......	6,000	4,000	......	3,300	......	2,400	......	......	......	1,800	......	1,500	......	......	Yes.	0
Mississippi Agricultural and Mechanical College.	103	9	112	6,000	4,500	3,500	3,300	2,500	2,400	1,800	1,800	1,500	......	......	1,320	1,320	......	......	......	......	Yes.	0
Mississippi State College for Women	6	60	66	4,500	2,500	......	3,000	2,000	......	......	1,800	1,500	......	......	1,200	......	......	......	......	......	Yes.	0
University of Mississippi	38	2	40	6,000	4,500	......	3,600	2,750	3,600	2,750	2,400	1,800	......	......	2,000	1,500	......	......	......	......	Yes.	1
University of Missouri	224	32	256	10,000	4,800	3,600	3,600	2,500	2,400	2,100	2,300	1,500	......	......	2,000	1,200	1,000	300	400	300	Yes.	2
Montana College of Agriculture and Mechanic Arts.	42	11	53	6,000	4,500	2,700	3,600	2,500	......	......	2,400	2,100	......	......	2,000	1,500	1,600	1,200	......	......	No.	0
Montana State School of Mines	9	0	9	4,000	......	......	3,600	2,200	2,650	......	2,400	2,400	......	......	600	......	......	......	......	......	No.	0
University of Montana	54	18	72	6,000	3,600	2,760	3,300	2,760	2,760	......	2,500	2,000	......	......	2,150	1,700	......	......	......	......	No.	0
University of Nebraska	268	70	338	8,400	6,000	2,500	4,300	2,200	3,200	1,700	3,000	1,300	......	......	2,500	1,300	1,800	600	......	......	Yes.	0
University of Nevada	43	10	53	12,000	4,200	3,600	3,600	3,000	3,000	2,400	2,750	2,000	......	......	2,250	1,800	1,500	1,200	......	......	Yes.	0
New Hampshire College of Agriculture and Mechanic Arts.	56	11	67	6,000	3,200	2,800	3,200	2,200	2,200	1,800	2,250	1,600	......	......	1,800	1,100	1,100	600	......	......	Yes.	0
Rutgers College (N. J.)	96	11	107	6,000	[1]6,500	3,300	4,000	2,500	2,200	1,800	1,800	1,500	......	......	1,500	1,200	1,000	600	......	......	Yes.	0
University of New Mexico	25	7	32	5,000	2,700	......	2,700	2,000	2,400	2,050	2,250	1,900	......	......	1,650	1,200	562	108	......	......	No.	0
New Mexico School of Mines	8	0	8	3,500	......	......	2,500	1,800	......	......	1,800	......	......	......	......	......	......	......	......	......	No.	0
New Mexico College of Agriculture and Mechanic Arts.	35	9	44	6,000	3,000	1,500	2,250	1,500	......	......	1,800	1,350	......	......	1,350	900	......	......	......	......	Yes.	0
New York State Library School	4	8	12	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Cornell University (N. Y.)	810	66	876	5,000	12,250	4,500	5,000	3,000	......	......	2,500	2,000	......	......	1,750	1,125	500	300	......	......	Yes.	2

New York State College of Forestry (at Syracuse University).	20	0	20	6,000	......	......	3,000	2,500	......	......	1,900	1,700	......	......	1,400	......	1,200	900	......	......	No..	0
University of North Carolina	112	18	130	6,000	......	......	4,500	3,750	3,600	3,000	2,750	2,250	......	......	2,000	1,500	......	......	......	......	Yes.	0
North Carolina College of Agriculture and Engineering.	70	0	70	5,000	3,000	......	3,000	500	2,400	2,000	2,200	1,200	......	......	2,100	675	......	......	......	......	No..	1
North Dakota Agricultural College	64	20	84	6,000	3,750	3,150	3,300	1,200	2,500	2,125	2,400	1,600	......	......	1,960	765	......	......	......	......	No..	0
University of North Dakota	64	21	85	6,000	4,000	4,000	3,500	3,000	2,000	2,500	2,500	1,800	......	......	1,800	1,300	780	250	......	......	Yes.	0
Ohio University	43	10	53	6,000	3,000	2,000	2,500	1,900	2,000	2,000	1,800	1,400	......	......	1,400	800	500	350	......	......	Yes.	0
Ohio State University	46	27	73	10,000	5,000	3,500	3,500	2,750	2,650	2,100	2,500	1,800	......	......	1,800	1,200	1,000	750	600	250	Yes.	0
Miami University (Ohio)	616	91	707	7,500	5,000	4,500	3,600	2,400	2,800	2,000	2,300	1,500	......	......	1,200	1,000	......	......	......	......	No..	0
Oklahoma College for Women	3	36	39	4,000	......	......	1,800	......	1,500	......	1,200	......	......	......	......	......	......	......	......	......	Yes.	0
University of Oklahoma	160	20	180	7,500	4,500	3,000	3,000	2,400	2,700	2,100	2,100	1,700	......	......	1,600	1,200	1,100	900	900	250	Yes.	0
Oklahoma Agricultural and Mechanical College.	102	35	137	7,500	4,000	2,600	3,000	2,200	2,400	2,000	2,100	1,800	......	......	2,000	1,500	1,500	1,200	......	......	Yes.	0
Oregon State Agricultural College	163	49	212	8,400	4,000	3,000	3,200	2,200	3,000	1,800	2,700	1,600	......	......	2,400	1,200	1,800	214	1,800	900	No..	1
University of Oregon	120	36	156	8,000	......	......	......	3,500	3,400	2,750	2,700	2,000	......	......	1,900	1,200	......	......	......	......	Yes.	0
Pennsylvania State College	185	26	211	9,000	6,500	3,750	5,000	1,800	3,000	1,500	2,800	1,500	......	......	2,100	1,000	1,500	600	......	......	Yes.	5
University of Porto Rico	43	29	72	......	3,600	3,300	2,700	1,800	......	......	1,700	1,500	......	......	1,450	1,000	500	360	......	......	No..	2
Rhode Island State College	26	7	33	4,500	3,000	......	2,700	2,000	......	......	2,400	2,000	......	......	2,000	1,100	1,350	400	......	......	No..	0
Medical College of the State of South Carolina.	59	0	59	......	3,000	3,000	4,000	3,000	......	......	2,500	2,000	......	......	1,800	1,200	......	......	......	......	No..	0
The Citadel, the Military College of South Carolina.	20	0	20	5,000	......	......	3,125	1,500	2,500	......	1,875	......	......	......	......	......	450	......	......	......	Yes.	2
Clemson Agricultural College (S. C.)	68	3	71	6,000	4,500	2,500	3,250	2,800	2,500	2,200	2,400	2,000	......	......	......	......	......	......	......	......	No..	0
University of South Carolina	36	0	36	5,000	3,500	3,000	3,000	3,000	2,250	2,250	......	......	$1,500	$1,200	1,200	600	......	......	200	90	Yes.	20
South Dakota State College of Agriculture and Mechanic Arts.	59	28	87	5,000	4,000	2,400	4,000	1,400	2,700	1,400	2,200	1,800	......	......	2,000	1,000	1,800	800	......	......	Yes.	0
South Dakota State School of Mines.	11	1	12	4,000	......	......	2,400	2,200	1,800	1,800	......	......	......	......	1,800	1,400	......	......	200	200	No..	0
University of South Dakota	36	16	52	5,500	3,500	2,500	3,000	2,200	2,000	1,600	1,800	1,500	......	......	1,600	1,000	500	300	......	......	No..	0
University of Tennessee	174	25	199	6,000	5,000	2,320	4,000	1,770	3,200	1,500	3,000	1,200	......	......	2,000	480	1,187	50	......	......	Yes.	0
University of Texas	234	48	282	7,500	5,000	3,800	4,000	3,250	3,000	2,500	......	......	2,400	1,800	1,600	1,400	......	......	1,200	1,000	Yes.	0
Agricultural and Mechanical College of Texas.	132	0	132	7,500	4,500	......	3,600	3,250	3,000	2,400	2,500	2,000	......	......	2,000	1,500	1,200	900	......	......	Yes.	2
College of Industrial Arts (Tex.)	20	84	104	5,500	3,500	2,000	2,500	2,000	2,000	1,350	1,650	1,250	......	......	......	......	1,800	1,200	......	......	Yes.	0
Agricultural College of Utah	58	14	72	5,500	3,600	3,150	3,255	2,310	2,520	1,995	2,100	1,785	......	......	1,785	1,250	......	......	......	......	Yes.	0
University of Utah	106	30	136	6,000	3,600	1,800	3,000	2,100	2,500	1,800	2,100	1,700	......	......	1,500	......	1,200	300	......	......	No..	0
University of Vermont and State Agricultural College.	119	9	128	7,000	4,000	......	3,200	......	2,800	......	2,400	1,800	......	......	1,800	1,200	......	......	......	......	Yes.	0
Virginia Polytechnic Institute	58	0	58	5,000	3,200	2,800	2,600	2,100	2,000	1,600	......	......	......	......	1,500	1,200	900	300	300	......	Yes.	25
University of Virginia	114	0	114	10,000	......	......	4,500	3,000	3,500	1,875	......	......	2,750	1,500	2,000	500	500	50	......	......	Yes.	1
Virginia Military Institute	33	0	33	4,950	......	......	......	......	......	......	......	......	......	......	1,800	......	......	......	......	......	Yes.	10
College of William and Mary (Va.)	20	3	23	5,000	......	......	2,750	2,100	2,100	1,800	......	......	......	......	900	200	200	......	180	......	Yes.	0
State College of Washington	127	38	165	8,000	5,000	2,900	3,500	2,600	2,700	1,900	2,500	1,850	......	......	2,100	1,500	1,300	800	......	......	Yes.	0
University of Washington	188	37	225	12,000	5,400	2,400	4,400	3,000	3,500	1,500	3,250	1,000	......	......	2,250	1,200	1,200	900	......	......	Yes.	0
West Virginia University	127	24	151	5,200	4,200	3,300	3,300	3,000	2,700	1,800	2,200	1,500	......	......	2,000	1,500	500	150	......	......	Yes.	0
University of Wisconsin	460	92	552	7,750	5,550	3,250	5,550	3,000	3,700	2,500	3,000	1,850	......	......	2,800	1,200	1,500	300	500	100	Yes.	4
University of Wyoming	35	21	56	5,040	3,600	3,300	3,180	2,700	2,460	2,280	2,100	1,800	......	......	1,680	1,200	......	......	......	......	Yes.	1

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[1] Dean of Agriculture.

TABLE 2.—*Student enrollment in State universities and State colleges for the year 1919–20.*

Names of institutions.	Regular term enrollment.													Enrolled in 1919 summer school.		Enrolled in other short courses.	Enrolled in professional departments.									In military drill.
	Preparatory department.[1]		Department of arts and sciences.		Graduate department.		Professional departments.[2]		All other students.[3]		Total (excluding duplicates).															
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Total.	Men.	Women.		Law.	Medicine.	Dentistry.	Pharmacy.	Veterinary medicine.	Agriculture.	Engineering.	Home economics.	All others.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Alabama Polytechnic Institute	....	....	94	10	5	1	931	6	226	0	1,256	17	1,273	196	206	....	....	....	....	43	49	248	553	....	218	834
Alabama Technical Institute and College for Women	0	199	0	258	0	0	0	290	0	36	0	493	493	27	256	....	....	....	....	....	....	....	....	290	....	....
University of Alabama	....	....	495	219	3	2	445	50	2	3	942	229	1,171	245	600	....	135	51	....	40	....	....	190	45	103	466
University of Arizona	....	....	247	308	27	27	332	24	176	76	676	412	1,088	32	46	....	30	....	....	....	....	61	178	17	87	240
University of Arkansas	81	71	218	105	2	2	342	147	35	47	678	372	1,050	105	295	350	....	23	....	....	....	68	236	30	126	254
University of California	717	10	2,280	3,618	432	531	3,336	1,701	240	178	6,954	5,676	12630	1,177	3,157	490	228	251	235	107	....	496	1,075	158	2,487	2,448
University of Colorado	....	....	520	701	35	18	693	41	83	0	1,216	711	1,927	256	1,071	....	93	76	....	40	....	....	525	....	....	....
Colorado Agricultural College	334	82	10	6	....	....	471	182	....	....	815	270	1,085	83	71	....	....	....	....	....	95	249	126	200	220	200
Colorado School of Mines	....	....	....	....	....	....	434	1	....	....	434	1	435	108	0	....	....	....	....	....	....	....	435	....	....	137
Connecticut Agricultural College	51	0	24	3	1	0	188	59	30	11	274	73	347	....	....	....	....	....	....	....	....	168	22	57	....	192
Delaware College	....	....	87	64	....	....	214	69	64	0	301	133	436	10	231	....	....	....	....	....	....	45	170	29	12	219
University of Florida	....	....	179	0	3	0	512	0	....	....	684	0	684	204	408	55	94	....	....	....	....	195	151	....	72	251
Florida State College for Women	0	38	0	263	0	2	0	359	0	4	0	662	662	23	446	18	....	....	....	....	....	....	....	69	290	....
University of Georgia	....	....	320	22	20	17	611	28	278	0	1,229	67	1,296	181	817	518	117	....	....	31	9	227	40	28	187	510
Georgia School of Technology	....	....	....	....	....	....	1,436	0	177	0	1,613	0	1,613	208	0	....	....	....	....	....	....	....	1,221	....	529	626
North Georgia Agricultural College	44	2	214	17	....	....	85	15	....	....	258	19	276	....	....	....	....	....	....	....	....	45	39	15	....	205
University of Hawaii	....	....	27	10	1	0	63	6	18	46	109	62	171	....	....	....	....	....	....	....	....	36	27	6	....	56
University of Idaho	40	2	184	252	7	6	293	79	44	45	568	308	876	22	69	21	36	....	....	....	....	112	114	43	101	317
Idaho Technical Institute	197	111	45	57	....	....	58	146	....	....	242	168	410	....	....	97	....	....	....	....	....	....	12	46	134	....
University of Illinois	....	....	737	963	292	88	5,571	851	58	0	6,178	1,757	7,935	816	498	781	109	308	196	209	....	1,055	1,745	386	2,411	2,100
Indiana University	....	....	1,092	458	83	54	865	1,251	....	....	2,040	1,743	3,783	422	810	....	180	243	....	....	....	....	....	195	1,921	480
Purdue University (Ind.)	....	....	69	53	29	10	2,332	228	44	16	2,474	307	2,781	....	....	148	....	....	....	66	....	579	1,698	217	....	1,374
Iowa State College of Agriculture and Mechanic Arts	852	35	73	83	81	42	2,330	672	10	4	3,233	801	4,034	271	170	90	....	....	....	....	108	1,154	1,102	644	....	1,045
State University of Iowa	102	98	1,463	1,286	265	217	1,145	40	3	17	2,903	1,658	4,561	529	763	....	148	244	312	67	....	....	894	....	20	912
University of Kansas	67	53	1,400	1,041	70	50	1,221	647	77	127	2,285	1,312	3,597	301	409	223	203	133	....	66	....	....	741	....	725	97

Kansas State Agricultural College	165	59	249	226	25	20	1,230	522	85	115	2,053	731	2,784	159	256	532	.....	.....	.....	.....	84	560	487	483	138	650
University of Kentucky	43	34	209	200	17	6	537	99	14	34	821	373	1,194	146	101	95	103	.....	.....	.....	.....	149	290	94	.....	300
Louisiana State University and Agricultural and Mechanical College	30	70	194	165	23	5	520	42	68	11	835	298	1,128	264	396	25	51	.....	.....	.....	.....	129	338	.....	48	340
University of Maine	.....	.....	276	152	17	4	644	68	44	8	981	282	1,213	.....	.....	.....	19	.....	.....	.....	.....	110	469	59	55	625
University of Maryland	49	0	79	7	13	0	239	17	86	0	466	24	490	45	156	.....	.....	.....	.....	.....	.....	123	94	2	37	267
Massachusetts Agricultural College	230	8	.....	.....	31	2	434	19	24	9	719	38	757	46	192	103	.....	.....	.....	.....	.....	453	.....	.....	.....	164
Massachusetts Institute of Technology	.....	.....	70	5	91	0	2,679	38	4	2	2,844	40	2,884	891	0	.....	.....	.....	.....	.....	.....	.....	2,668	.....	44	1,202
Lowell Textile School (Mass.)	.....	.....	.....	.....	8	0	171	1	109	8	280	4	284	.....	.....	.....	.....	.....	.....	.....	.....	.....	172	.....	.....	.....
University of Michigan	.....	.....	3,149	1,858	261	79	3,231	74	.....	.....	6,641	2,011	8,652	1,425	536	.....	382	436	350	99	.....	.....	1,897	.....	141	.....
Michigan Agricultural College	.....	.....	.....	.....	12	1	1,058	354	.....	.....	1,070	355	1,425	282	102	577	.....	.....	.....	.....	34	522	466	350	40	458
Michigan School of Mines	.....	.....	.....	.....	.....	.....	180	0	.....	.....	180	0	180	.....	.....	.....	.....	.....	.....	.....	.....	.....	180	.....	.....	.....
University of Minnesota	1,349	462	2,111	1,635	422	135	3,190	806	.....	.....	7,874	4,306	12,180	787	809	1,363	268	385	400	117	.....	414	1,399	310	703	1,699
Mississippi Agricultural and Mechanical College	377	0	84	0	5	1	1,040	0	89	0	1,545	1	1,546	248	370	56	.....	.....	.....	.....	.....	621	300	.....	119	800
Mississippi State College for Women	.....	.....	0	895	.....	.....	.....	.....	0	70	0	965	965	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
University of Mississippi	.....	.....	224	85	0	1	246	12	18	16	488	114	602	.....	.....	.....	71	48	.....	53	.....	.....	47	.....	39	.....
University of Missouri	125	0	1,111	1,023	121	58	1,801	505	.....	.....	3,189	1,489	4,678	.....	.....	282	189	72	.....	.....	.....	516	800	.....	759	1,498
Montana College of Agriculture and Mechanic Arts	229	17	55	99	.....	.....	287	78	11	36	582	230	812	15	254	159	.....	.....	.....	.....	.....	102	189	73	113	234
Montana State College of Mines	.....	.....	.....	.....	.....	.....	118	8	.....	.....	118	8	126	.....	.....	.....	.....	.....	.....	.....	.....	.....	126	.....	.....	.....
University of Montana	.....	.....	263	331	.....	.....	194	55	13	83	444	345	789	45	345	.....	48	.....	.....	25	.....	.....	.....	.....	176	90
University of Nebraska	226	285	1,072	1,701	145	126	2,015	662	.....	.....	3,279	2,480	5,759	300	567	881	218	374	110	66	.....	289	537	253	830	1,065
University of Nevada	.....	.....	73	119	3	4	165	41	3	22	244	186	430	15	103	.....	.....	.....	.....	.....	.....	89	126	15	26	105
New Hampshire College of Agriculture and Mechanic Arts	.....	.....	202	124	.....	.....	428	63	.....	.....	630	187	817	.....	.....	.....	.....	.....	.....	.....	.....	181	249	61	.....	308
Rutgers College (N. J.)	85	0	209	91	16	2	394	40	9	0	641	131	772	157	875	244	.....	.....	.....	.....	.....	113	281	40	.....	389
University of New Mexico	.....	.....	92	126	3	3	101	148	14	11	196	210	406	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	27	162	.....
New Mexico School of Mines	19	2	.....	.....	.....	.....	56	2	17	3	92	7	99	.....	.....	.....	.....	.....	.....	.....	.....	.....	58	.....	.....	.....
New Mexico College of Agriculture and Mechanic Arts	130	30	10	15	4	0	88	17	141	5	404	97	501	.....	.....	.....	.....	.....	.....	.....	.....	28	61	16	.....	296
New York State Library School	.....	.....	.....	.....	.....	.....	7	29	.....	.....	7	29	36	0	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	36	.....
Cornell University (N. Y.)	.....	.....	1,190	622	340	67	3,193	463	.....	.....	4,688	1,127	5,765	1,135	1,128	896	178	849	.....	.....	103	1,283	1,613	.....	130	1,084
New York State College of Forestry (at Syracuse University)	.....	.....	.....	.....	.....	.....	268	0	.....	.....	268	0	268	.....	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	268	34
University of North Carolina	.....	.....	509	31	35	5	611	13	12	0	1,387	50	1,437	273	649	.....	168	64	.....	59	.....	.....	195	.....	138	128
North Carolina College of Agriculture and Engineering	218	0	.....	.....	13	0	760	0	23	0	1,014	0	1,014	96	378	474	.....	.....	.....	.....	4	201	555	.....	.....	690
North Dakota Agricultural College	448	108	69	40	8	2	163	87	13	12	517	227	744	25	53	291	.....	.....	.....	83	11	72	52	67	15	243
University of North Dakota	72	68	301	203	9	3	251	246	0	19	591	447	1,038	58	157	.....	35	36	.....	.....	.....	.....	160	.....	266	150
Ohio University	.....	.....	380	274	.....	.....	73	419	.....	.....	453	693	1,146	255	1,439	.....	.....	.....	.....	.....	.....	.....	.....	.....	492	.....
Ohio State University	.....	.....	1,704	897	145	63	3,205	855	282	0	5,336	1,815	7,151	743	516	178	150	178	166	121	103	683	1,423	280	956	2,324
Miami University (Ohio)	.....	.....	429	174	.....	.....	50	396	.....	.....	479	570	1,049	117	511	.....	.....	.....	.....	.....	.....	.....	.....	84	326	.....
Oklahoma College for Women	0	261	0	159	.....	.....	0	93	.....	.....	0	420	420	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46	47	.....

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[1] Including secondary schools.

[2] Includes students in columns 18 to 26, inclusive.

[3] Includes students in music, art, oratory, business, etc., unless they are enrolled in four-year courses leading to a collegiate degree.

TABLE 2.—*Student enrollment in State universities and State colleges for the year 1919–20*—Continued.

Names of institutions.	Regular term enrollment.													Enrolled in 1919 summer school.		Enrolled in other short courses.	Enrolled in professional departments.									In military drill.
	Preparatory department.		Department of arts and sciences.		Graduate department.		Professional departments.		All other students.		Total (excluding duplicates).						Law.	Medicine.	Dentistry.	Pharmacy.	Veterinary medicine.	Agriculture.	Engineering.	Home economics.	All others.	
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Total.	Men.	Women.											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
University of Oklahoma	.....	.....	877	617	30	20	928	329	108	160	1,641	967	2,608	334	950	.....	173	86	.....	146	.....	.....	532	.....	320	537
Oklahoma Agricultural and Mechanical College	276	151	32	29	4	9	480	260	429	132	1,189	552	1,741	75	317	.....	.....	.....	.....	.....	.....	136	174	153	277	873
Oregon State Agricultural College	.....	.....	.....	.....	35	6	2,232	870	195	103	2,463	979	3,442	75	360	1,088	.....	.....	.....	156	.....	769	936	497	745	1,211
University of Oregon	.....	.....	971	814	28	19	608	457	68	99	1,064	825	1,889	180	100	.....	69	104	.....	.....	.....	.....	.....	15	906	442
Pennsylvania State College	.....	.....	672	66	66	10	2,209	211	44	16	2,991	303	3,294	249	796	99	.....	.....	.....	.....	.....	659	1,240	141	380	1,630
University of Porto Rico	155	85	33	22	.....	.....	142	157	58	232	388	496	884	153	11	.....	46	.....	.....	33	.....	22	57	.....	141	315
Rhode Island State College	.....	.....	35	4	4	1	233	54	12	1	284	59	343	.....	.....	.....	.....	.....	.....	.....	.....	50	183	54	.....	189
Medical College of the State of South Carolina	.....	.....	.....	.....	.....	.....	111	6	.....	.....	111	6	117	.....	.....	.....	.....	65	.....	52	.....	.....	.....	.....	.....	.....
The Citadel, the Military College of South Carolina	.....	.....	314	0	.....	.....	.....	.....	.....	.....	314	0	314	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	314
Clemson Agricultural College (S. C.)	.....	.....	.....	.....	.....	.....	791	0	95	0	886	0	886	128	0	.....	.....	.....	.....	.....	.....	351	426	.....	14	820
University of South Carolina	.....	.....	247	43	15	8	285	10	57	21	504	75	579	.....	.....	.....	101	.....	.....	.....	.....	.....	58	.....	136	150
South Dakota State College of Agriculture and Mechanic Arts	340	80	53	28	4	0	218	98	25	29	613	238	851	27	104	.....	.....	.....	.....	44	.....	96	81	75	20	395
South Dakota State School of Mines	36	0	.....	.....	.....	.....	91	1	.....	.....	127	1	128	.....	.....	.....	.....	.....	.....	.....	.....	.....	92	.....	.....	.....
University of South Dakota	23	16	115	221	.....	.....	292	156	2	9	430	479	909	29	71	.....	123	76	.....	.....	.....	65	.....	.....	184	.....
University of Tennessee	.....	.....	219	235	7	3	646	97	.....	.....	851	247	1,098	.....	.....	66	89	69	54	22	.....	191	194	88	36	267
University of Texas	.....	.....	1,496	1,493	57	63	1,890	1,248	.....	.....	2,757	1,661	4,418	655	1,225	.....	344	220	.....	79	.....	.....	727	263	1,505	.....
Agricultural and Mechanical College of Texas	253	0	.....	.....	9	0	1,071	0	478	0	1,802	0	1,802	850	71	.....	.....	.....	.....	.....	15	336	683	.....	37	1,229
College of Industrial Arts (Texas)	0	221	.....	.....	.....	.....	0	1,242	.....	.....	0	1,463	1,463	0	720	.....	.....	.....	.....	.....	.....	.....	.....	1,016	226	.....
Agricultural College of Utah	467	98	78	91	10	13	526	158	.....	.....	891	361	1,252	61	180	.....	.....	.....	.....	.....	.....	202	87	141	97	301
University of Utah	60	45	96	235	36	8	873	319	.....	.....	1,065	597	1,662	101	623	.....	64	147	.....	.....	.....	.....	387	.....	584	109
University of Vermont and State Agricultural College	.....	.....	274	192	2	1	324	66	1	4	601	263	864	25	246	57	.....	102				64	159	66	.....	297
Virginia Polytechnic Institute	.....	.....	38	0	18	0	635	0	68	0	759	0	759	.....	.....	32	.....	.....	.....	.....	.....	174	427	.....	34	574

University of Virginia	.....	.....	931	0	44	0	668	0	.....	.....	1,638	0	1,638	307	1,167	.....	313	103	.....	.....	.....	.....	252	.....	.....	.....
Virginia Military Institute	.....	.....	493	0	.....	.....	103	0	.....	.....	596	0	596	.....	.....	.....	.....	.....	.....	.....	.....	.....	103	.....	.....	596
Medical College of Virginia	.....	.....	.....	.....	.....	.....	394	26	.....	.....	394	26	420	.....	.....	.....	.....	420	.....	.....	.....	.....	.....	.....	.....	.....
College of William and Mary (Va.)	.....	.....	224	80	2	1	.....	.....	1	25	227	106	333	25	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
State College of Washington	316	93	231	242	70	44	830	312	.....	.....	1,698	895	2,593	276	160	300	.....	.....	.....	84	48	352	342	150	204	594
University of Washington	.....	.....	435	1,197	67	60	2,684	1,157	88	0	3,541	1,979	5,520	473	1,022	120	157	.....	.....	114	.....	.....	1,008	174	2,388	740
West Virginia University	.....	.....	397	369	20	17	718	417	96	13	1,075	662	1,737	200	439	16	54	51	.....	82	52	190	324	132	315	567
University of Wisconsin	148	0	1,160	1,326	343	164	3,412	1,033	.....	.....	4,793	2,501	7,294	1,384	1,829	403	179	142	.....	93	.....	571	1,104	261	2,105	1,377
University of Wyoming	64	72	62	41	.....	.....	132	74	19	47	277	234	511	22	250	.....	.....	.....	.....	.....	.....	64	32	20	60	174

TABLE 3.—*Property and income of State universities*

	Names of institutions.	Property.				
		Bound volumes in libraries.	Value of library, scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings.	Endowment funds.
	1	2	3	4	5	6
1	Alabama Polytechnic Institute	3,400	$245,000	$30,000	$800,000	$284,50
2	Alabama Technical Institute and College for Women	9,976	82,590	15,500	665,000	345,416
3	University of Alabama	34,800	190,000	300,000	847,318	930,212
4	University of Arizona	32,600	205,900	213,264	909,360	10,500
5	University of Arkansas	35,300	333,000	127,000	709,000	*130,000*
6	University of California	479,000	3,330,085	....	11,506,932	7,253,926
7	University of Colorado	122,568	525,000	210,000	1,110,000	80,000
8	Colorado Agricultural College	32,711	175,850	225,000	755,000	....
9	Colorado School of Mines	15,500	36,356	83,914	456,071	....
10	Connecticut Agricultural College	16,640	187,248	87,560	1,776,834	256,000
11	Delaware College	27,000	258,272	354,944	1,051,698	394,716
12	University of Florida	35,500	121,652	185,000	475,000	198,080
13	Florida State College for Women	2,000	150,000	100,000	*795,000*	....
14	University of Georgia	61,000	333,386	750,000	1,574,000	402,702
15	Georgia School of Technology	14,800	230,000	150,000	587,700	230,000
16	North Georgia Agricultural College	4,000	10,000	20,000	90,000	....
17	University of Hawaii	21,788	169,475	202,700	72,622	....
18	University of Idaho	4,000	444,828	70,000	762,243	*1,500,000*
19	Idaho Technical Institute	44,500	46,000	95,000	231,000	....
20	University of Illinois	461,598	2,702,161	1,079,315	4,866,749	649,012
21	Indiana University	134,370	599,143	284,300	1,392,481	852,301
22	Purdue University (Ind.)	53,893	590,000	225,000	1,611,500	444,500
23	Iowa State College of Agriculture and Mechanic Arts	77,715	1,339,068	306,463	2,907,485	692,908
24	State University of Iowa	162,000	1,677,550	607,353	3,179,223	301,889
25	University of Kansas	132,638	925,000	411,000	2,395,000	151,000
26	Kansas State Agricultural College	68,412	830,224	612,460	1,078,684	491,746
27	University of Kentucky	41,261	357,904	253,745	1,148,684	164,075
28	Louisiana State University and Agricultural and Mechanical College	50,325	307,897	259,992	588,544	318,963
29	University of Maine	68,000	254,346	14,000	717,771	218,300
30	University of Maryland	8,275	214,668	85,800	741,190	....
31	Massachusetts Agricultural College	61,439	713,102	132,238	1,020,787	*361,000*
32	Massachusetts Institute of Technology	140,737	1,889,933	2,669,351	6,233,473	14,989,308
33	Lowell Textile School (Mass.)	1,284	291,519	105,639	32,483	....
34	University of Michigan	432,394	3,010,707	1,022,439	6,249,502	1,329,476
35	Michigan Agricultural College	45,000	230,000	120,000	1,300,000	4,000
36	Michigan School of Mines	29,755	288,876	105,619	319,239	....
37	University of Minnesota	300,000	2,838,955	2,727,640	6,319,776	3,860,200
38	Mississippi Agricultural and Mechanical College	34,803	562,234	157,520	860,895	239,787
39	Mississippi State College for Women	13,539	140,650	100,000	530,500	....
40	University of Mississippi	31,000	275,000	15,000	1,000,000	710,141
41	University of Missouri	223,670	1,446,172	823,342	2,094,718	1,646,841
42	Montana College of Agriculture and Mechanic Arts	21,300	188,528	92,684	527,145	....
43	Montana State School of Mines	7,000	60,000	....	200,000	....
44	University of Montana	46,200	141,000	130,000	375,000	18,250
45	University of Nebraska	147,500	876,226	1,655,530	2,653,139	896,989
46	University of Nevada	35,500	222,262	291,290	274,978	329,240
47	New Hampshire College of Agriculture and Mechanic Arts	40,765	50,000	60,000	950,000	....
48	Rutgers College (N. J.)	106,000	284,000	492,800	1,096,504	1,409,654
49	University of New Mexico	13,000	60,590	40,000	283,879	914
50	New Mexico School of Mines	2,500	33,092	8,000	170,500	....
51	New Mexico College of Agriculture and Mechanic Arts	19,062	255,000	41,500	221,500	69,00
52	New York State Library School	(²)	....	....	....	....
53	Cornell University (N. Y.)	630,637	2,994,156	392,541	6,667,168	16,001,1
54	New York State College of Forestry	5,000	85,000	40,000	279,000	....
55	University of North Carolina	93,914	408,819	139,060	987,990	262,2
56	North Carolina College of Agriculture and Engineering	10,084	284,796	110,073	699,995	....
57	North Dakota Agricultural College	30,250	316,225	95,000	736,375	1,074,50
58	University of North Dakota	58,000	342,650	123,200	640,000	2,250,00
59	Ohio University	52,000	215,000	550,000	1,016,000	....
60	Ohio State University	215,000	1,865,040	2,079,695	3,177,293	1,046,4

[1] Includes appropriations for experiment stations and extension work.

and State colleges for the year 1919–20.

Income.							Analysis of State appropriations.				
Student fees, excluding board and room rent.	From productive funds.	From the State.[1]	From United States Government.[1]	Private benefactions.	From all other sources.	Total working income.	Mill tax rate.	Receipts from mill tax.	Appropriation for current expenses.[1]	For building and permanent improvements.	
7	8	9	10	11	12	13	14	15	16	17	
$26,550	$21,440	$250,766	$216,380	....	$28,867	$544,003	......	....	$250,766	....	1
19,352	20,986	45,971	3,221	....	13,296	102,826	......	....	45,971	....	2
49,088	43,638	78,979	....	$4,400	38,094	214,199	......	....	78,979	....	3
18,142	22,140	488,868	101,722	60,000	64,996	755,868	......	....	433,968	$54,900	4
24,332	6,883	250,000	148,637	....	104,378	534,230	$\frac{1}{5}$	$230,000	20,000	....	5
594,211	368,821	2,682,597	159,339	943,326	1,096,170	5,844,464	......	....	2,575,215	107,382	6
143,225	4,000	500,000	....	....	....	647,225	$\frac{1}{4}$	500,000	....	....	7
26,752	19,424	414,179	122,750	....	183,091	766,196	$\frac{1}{8}$	311,982	102,197	....	8
23,356	....	137,059	....	....	11,922	172,337	$\frac{1}{8}$	122,059	15,000	....	9
31,055	24,750	426,111	84,547	....	181,361	747,826	......	....	196,425	229,686	10
24,069	24,446	94,045	94,528	58,305	35,263	330,656	......	....	89,045	15,000	11
11,084	10,054	175,710	55,000	1,302	2,500	255,650	......	....	155,710	20,000	12
15,000	2,064	175,000	....	....	....	192,064	......	....	192,064	....	13
32,968	26,609	341,585	152,418	3,522	105,849	662,951	......	....	336,585	5,000	14
93,839	2,950	108,333	....	....	21,050	226,172	......	....	108,333	....	15
2,100	....	30,000	....	....	2,000	34,100	......	....	30,000	....	16
308	....	53,487	50,000	13,025	21,179	137,999	......	....	53,487	....	17
6,606	110,675	367,890	103,472	....	72,800	661,443	......	....	327,890	40,000	18
4,537	18,000	116,000	3,000	....	6,652	148,189	......	....	93,000	23,000	19
353,684	32,451	2,871,500	281,076	35,400	342,138	3,916,249	$\frac{3}{8}$	2,535,000	11,500	325,000	20
142,144	54,660	703,127	12.851	....	14,423	927,205	$\frac{20}{100}$	638,127	65,000	....	21
109,337	45,728	735,523	219,362	....	393,627	1,503,577	$\frac{22}{100}$	564,523	171,000	....	22
169,894	35,088	1,538,150	218,338	1,000	286,785	2,249,255	......	....	1,301,080	229,070	23
183,051	23,419	1,269,583	....	....	902,886	2,378,939	......	....	1,104,583	165,000	24
136,939	10,178	905,730	3,073	....	93,489	1,149,409	......	....	878,500	27,230	25
96,216	26,307	961,373	189,462	....	331,288	1,604,646	......	....	888,873	72,500	26
35,080	10,350	426,040	411,756	....	202,111	1,085,337	$\frac{1}{10}$	371,040	50,000	....	27
16,998	14,555	210,042	165,221	....	93,258	500,074	......	....	210,042	....	28
93,122	9,915	220,983	119,986	....	114,456	558,463	......	....	220,983	....	29
30,169	6,548	247,526	142,936	....	22,030	449,209	......	....	247,526	....	30
9,082	10,613	673,139	88,725	....	126,904	908,463	......	....	568,660	104,479	31
750,330	525,893	100,000	21,682	5,890,877	38,622	7,327,404	......	....	100,000	....	32
....	....	145,600	....	....	....	145,600	......	....	145,600	....	33
682,445	90,320	2,346,750	8,673	80,573	666,974	3,875,735	$\frac{3}{8}$	1,818,750	203,000	325,000	34
108,846	70,736	785,000	213,221	2,210	263.413	1,443,426	$\frac{1}{8}$	593,578	191.422	....	35
14,045	....	77,394	....	....	....	91,439	......	91,439	....	....	36
501,420	109,883	2,948,851	191,810	89,371	567,101	4,408,436	$\frac{22}{100}$	590,851	1,981,000	377,000	37
22,948	14,553	450,315	194,815	....	217,021	899,652	......	....	438,315	12,000	38
7,511	9,388	152,092	6,650	....	....	175,641	......	....	152,092	....	39
55,385	42,606	185,300	....	....	....	283,291	......	....	175,300	10,000	40
180,806	94,662	913,207	262,250	41,011	234,924	1,726,950	......	....	868,645	44,652	41
13,191	....	439,500	110,358	....	89,094	652,143	......	....	369,500	70,000	42
1,842	....	95,000	....	....	....	96,842	......	....	95,000	....	43
21,409	12,486	257,001	1,200	26,126	12,392	330,314	......	....	217,514	39,487	44
155,009	56,998	1,532,425	163,225	....	488,199	2,395,856	1	848,095	29,000	527,580	45
11,706	14,701	241,708	95,692	550	19,573	383,930	$\frac{1}{5}$	150,619	91,089	....	46
30,303	38,710	183,075	104,579	....	105,042	461,709	......	....	173,075	10,000	47
80,700	53,840	316,978	142,338	503,185	....	1,097,041	......	....	316,978	....	48
8,180	50,694	76,355	....	10,704	12,679	158,612	......	....	76,355	....	49
2,933	19,700	26,072	....	....	3,767	52,472	......	....	26,072	....	50
....	18,290	161,423	113,324	....	....	293,037	......	....	148,923	12,500	51
40,531	8,826	301,765	3,908	23,974	20,548	399,552	......	....	230,215	71,550	52
974,929	738,113	1,101,261	247,374	1,142,216	412,205	4,616,098	......	....	1,089,427	11,834	53
6,367	....	129 880	....	....	....	136,247	......	....	129,880	....	54
95,629	14,058	360,000	....	1,000	....	470,687	......	....	235,000	125,000	55
39,941	7,500	383,843	232,343	....	126,455	790,082	......	....	308,843	75,000	56
15,750	83,859	226,010	117,071	4,850	78,893	526,433	......	....	226,010	....	57
29,400	79,290	341,670	....	....	70,697	521,057	......	....	235,630	106,040	58
31,407	5,865	287,337	....	....	39,635	364,244	......	....	260,170	27,167	59
223,723	62,355	1,836,296	234.537	2,065	263.948	2,622,924	......	....	1,782,506	53,790	60

[1] Uses New York State library.

TABLE 3.—*Property and income of State universities*

	Names of institutions.	Property.				
		Bound volumes in libraries.	Value of library, scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings.	Endowment funds.
	1	2	3	4	5	6
61	Miami University (Ohio)	60,000	$278,611	$100,143	$860,921	$156,716
62	Oklahoma College for Women	6,000	72,543	20,000	600,000	....
63	University of Oklahoma	32,600	379,807	122,243	1,218,754	3,670,00
64	Oklahoma Agricultural and Mechanical College	25,000	418,246	75,000	1,282,453	....
65	Oregon State Agricultural College	41,450	564,991	475,277	1,227,712	203,383
66	University of Oregon	94,000	331,016	349,000	1,111,871	55,000
67	Pennsylvania State College	75,690	923,826	152,180	1,975,386	517,000
68	University of Porto Rico	8,000	101,613	55,902	185,649	11,109
69	Rhode Island State College	22,700	152,712	15,000	325,000	50,000
70	Medical College of the State of South Carolina	....	52,092	40,000	138,800	....
71	The Citadel, the Military College of South Carolina	7,000	72,959	500,000	900,000	....
72	Clemson Agricultural College (S. C.)	19,349	643,836	334,959	1,337,749	154,439
73	University of South Carolina	65,000	228,092	945,000	494,700	....
74	South Dakota State College of Agriculture and Mechanic Arts	25,000	86,000	96,000	667,000	451,059
75	South Dakota State School of Mines	7,700	95,000	25,000	100,000	....
76	University of South Dakota	38,000	240,000	50,000	665,000	....
77	University of Tennessee	41,402	369,137	911,850	921,543	425,000
78	University of Texas	194,549	1,100,128	554,700	1,582,810	2,575,000
79	Agricultural and Mechanical College of Texas	18,348	856,086	160,748	2,098,929	209,000
80	College of Industrial Arts (Tex.)	12,212	248,338	150,109	858,528	....
81	Agricultural College of Utah	33,554	245,000	29,500	888,900	....
82	University of Utah	62,197	378,410	50,000	962,700	120,000
83	University of Vermont and State Agricultural College	105,000	337,000	100,000	1,500,000	808,471
84	Virginia Polytechnic Institute	30,000	265,003	120,207	590,700	344,312
85	University of Virginia	120,300	358,521	600,000	1,486,126	2,745,055
86	Virginia Military Institute	23,000	30,526	37,500	810,732	44,700
87	Medical College of Virginia	....	....	....	....	....
88	College of William and Mary (Va.)	21,000	75,000	50,000	275,000	151,327
89	State College of Washington	74,856	397,148	153,281	1,455,294	1,065,199
90	University of Washington	120,530	727,400	1,061,250	1,212,514	6,343,627
91	West Virginia University	70,000	....	600,000	2,000,000	115,104
92	University of Wisconsin	76,000	2,031,870	2,158,639	5,102,637	717,282
93	University of Wyoming	246,000	335,000	125,000	530,000	806,546

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[3] Fertilizer tax.

[4] 28.34 per cent of 28 per cent of the State levy of 2.4 mills.

[5] 64.43 per cent of 28 per cent of the State levy of 2.4 mills.

and State colleges for the fiscal year 1919–20—Continued.

Income.							Analysis of State appropriations.				
Student fees, excluding board and room rent.	From productive funds.	From the State.	From United States Government.	Private benefactions.	From all other sources.	Total working income.	Mill tax rate.	Receipts from mill tax.	Appropriation for current expenses.	For building and permanent improvements.	
7	8	9	10	11	12	13	14	15	16	17	
....	....	....	....	....	....	....	....	....	....	....	61
3,604	....	241,100	1,500	....	427	246,631	....	....	83,600	157,500	62
70,291	183,200	738,543	....	....	....	992,034	....	....	....	333,334	63
10,762	43,053	652,140	196,080	....	40,061	942,096	....	....	426,440	225,700	64
75,599	11,786	849,656	120,383	....	72,896	1,130,320	$\frac{4}{10}$	198,087	394,062	60,000	65
35,847	8,377	973,997	....	50,000	9,290	1,077,511	$\frac{3}{10}$	297,130	276,867	400,000	66
98,716	31,020	921,810	276,631	....	294,604	1,622,781	....	....	921,810	....	67
7,969	2,923	145,921	53,584	....	2,727	213,124	....	....	120,921	25,000	68
8,235	2,500	130,928	91,492	....	23,845	257,000	....	....	85,928	45,000	69
6,992	....	60,458	....	....	837	68,287	....	....	58,514	1,944	70
....	....	153,245	....	....	2,172	156,417	....	....	84,187	69,058	71
17,473	9,266	381,467	172,223	....	26,258	606,687	(3)	313,473	67,995	....	72
11,186	....	211,515	....	....	7,525	230,226	....	....	179,015	32,500	73
21,596	76,518	380,658	132,140	....	156,262	767,174	....	....	356,235	24,423	74
2,316	18,380	157,000	....	....	....	177,696	....	....	55,000	102,000	75
13,607	21,581	213,000	....	....	24,161	272,349	....	....	213,000	....	76
71,267	24,210	273,000	204,821	49,357	135,185	757,840	$\frac{1}{2}$	273,000	....	....	77
113,234	438,500	839,365	6,604	8,000	31,106	1,436,809	....	....	839,365	....	78
86,973	10,450	1,027,005	340,124	....	411,964	1,876,516	....	....	99,505	17,500	79
44,237	....	371,751	3,497	....	25,724	445,209	....	....	235,080	136,671	80
14,763	....	294,880	106,651	....	42,968	459,262	(4)	128,275	116,658	49,947	81
35,719	12,800	832,686	....	....	7,031	888,236	(5)	371,642	461,044	....	82
81.815	42,781	113,173	105,537	125,000	179,601	647,907	....	....	113,173	....	83
19,944	20,659	317,336	205,025	....	263.614	826,578	....	....	284,236	33,100	84
149,509	114,061	188,667	....	121,963	164,276	738,476	....	....	188,667	....	85
37,984	4,818	150,000	....	....	21,640	214,442	....	....	70,000	80,000	86
....	....	....	....	....	....	....	....	....	....	....	87
10,657	9,843	77,005	....	....	....	97,505	....	....	58,670	18,335	88
58,427	78,046	691,313	134,570	....	265,616	1,227,973	(6)	450,332	48,481	192,500	89
228,074	42,696	1,133,978	7,746	....	66,540	1,479.034	(7)	903,731	84,051	146,196	90
48,971	8,877	562,561	162,490	....	42,077	824,976	....	....	385,061	177,500	91
716,360	41,533	1,926,160	209,264	80,228	510,095	3,483,640	$\frac{3}{8}$	1,525,600	333,894	66,666	92
18,997	49,528	203,858	98,536	955	11,562	383,436	$\frac{1}{2}$	190.858	13,000	....	93

[6] A little less than one-half of 1 mill.
[7] A little less than two-thirds of 1 mill.

TABLE 4.—*Per cent of income of State universities and State colleges derived from the various sources, 1919–20.*

States.	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.
1	2	3	4	5
Alabama	10.0	69.2	0.5	20.3
Arizona	2.9	78.1	8.0	11.0
Arkansas	1.3	74.6	....	24.1
California	6.3	48.6	16.1	29.0
Colorado	1.5	74.0	....	24.5
Connecticut	3.3	68.3	....	28.4
Delaware	7.4	57.0	17.6	18.0
Florida	2.7	90.6	.2	6.5
Georgia	3.6	64.7	.4	31.3
Idaho	15.9	72.9	....	11.2
Illinois	.8	80.5	.9	17.8
Indiana	4.1	68.7	....	27.2
Iowa	1.3	65.4	....	33.3
Kansas	1.3	74.8	....	23.9
Kentucky	1.0	77.2	....	21.8
Louisiana	2.9	75.1	....	22.0
Maine	1.8	61.0	....	37.2
Maryland	1.5	86.9	....	11.6
Massachusetts	6.4	12.3	70.3	11.0
Michigan	3.0	63.4	1.5	32.1
Minnesota	2.5	71.2	2.0	24.3
Mississippi	4.9	72.8	....	22.3
Missouri	5.5	68.1	2.4	24.0
Montana	1.1	83.7	2.4	12.8
Nebraska	2.4	70.8	....	26.8
Nevada	3.8	87.9	0.1	8.2
New Hampshire	8.4	62.3	....	29.3
New Jersey	4.9	41.9	45.9	7.3
New Mexico	17.6	74.8	2.1	5.5
New York	15.5	31.1	24.0	29.4
North Carolina	1.7	77.4	....	20.9
North Dakota	15.6	65.4	.4	18.6
Ohio	2.3	79.0	....	18.7
Oklahoma	10.4	83.9	....	5.7
Oregon	1.0	86.9	2.5	9.6
Pennsylvania	1.9	73.8	....	24.3
Rhode Island	1.4	93.6	....	5.0
South Carolina	.9	92.2	....	6.9
South Dakota	9.6	72.5	....	17.9
Tennessee	3.2	63.1	6.5	27.2
Texas	11.9	51.8	.2	36.1
Utah	1.0	91.6	....	7.4
Vermont	6.6	33.8	19.3	40.3
Virginia	8.0	50.0	6.5	35.5
Washington	4.4	72.7	....	22.9
West Virginia	1.1	87.9	....	11.0
Wisconsin	1.2	61.3	2.3	35.2
Wyoming	12.9	78.9	.2	8.0

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